System Guidance to support the use of Best Value Direct Acting Oral Anticoagulants (DOACs) in patients with Non-Valvular Atrial Fibrillation (NV-AF)

Background

NHS Cambridgeshire and Peterborough recommend generic rivaroxaban tablets and apixaban tablets as the **first line formulary choices for NV-AF patients.**

The National Institute of Clinical Excellence (NICE) guideline on Atrial fibrillation: diagnosis and management recommends DOACs as the preferred anticoagulants for NV-AF patients.

NHS England's "Operational note: Commissioning recommendations for national procurement for Direct-acting Oral Anticoagulant(s) (DOACs)" advises as follows around treatment selection: *"For patients commencing treatment for AF: subject to the criteria specified in the relevant NICE technology appraisal guidance, clinicians should use the best value DOAC that is clinically appropriate for the patient."*

This guidance is intended as prescriber decision support for prescribing anticoagulants for patients with diagnosed NV-AF, and assist prescribing a suitable and cost-effective DOAC i.e., Apixaban or rivaroxaban (generic prescribing) for:

- treating new patients with confirmed NV-AF.
- switching current Non-Valvular Atrial Fibrillation patients prescribed warfarin.
- switching between DOACs.

This guidance is developed in collaboration with our local specialist system partners and excludes atrial fibrillation patients with significant mitral stenosis or metal valve replacements, who would usually be treated with warfarin. Local expert opinion and guidance may differ from the advice included by the manufacturers in their summary of product characteristics (SPC).

The diagnosis and management of NV-AF is beyond the scope of this document and prescribers are referred to the NICE guideline above.
Where a DOAC is contraindicated, not tolerated or not suitable in people with atrial fibrillation, offer a vitamin K antagonist.

Exclusions

Patients who should be **excluded** from DOAC therapy include:

- Severe renal impairment - Creatinine Clearance (CrCL) <15 mL/min (caution if borderline or at risk of acute kidney injury).
- Bodyweight less than 30kg (seek specialist advice).
- Cardiac (Prosthetic mechanical heart valve (metal); Moderate to severe mitral stenosis – usually warfarin).
- Antiphospholipid syndrome.
- Pregnant or breastfeeding (seek specialist advice).
- Hypersensitivity.
- Uncontrolled severe hypertension.
- Severe liver disease.
- Major bleeding risk, such as current or recent gastrointestinal ulcer; oesophageal varices; recent brain or spinal injury; recent brain, spine, or ophthalmic surgery; recent intracranial haemorrhage; malignant neoplasm at high risk of bleeding; vascular aneurysm; active bleeding; arteriovenous malformations; major intraspinal or intracerebral vascular abnormalities.
- Others (local advice) - All transplant waiting list patients need to be on warfarin; NV-AF patients with a second indication for anticoagulation that requires warfarin e.g., pulmonary hypertension.

For biological/bioprosthetic valve replacements transcatheter aortic valve implantation (TAVI) and surgical aortic valve replacement (SAVR)] can be included under the term NV-AF as per local cardiology specialist advice. For complete information on contraindications, cautions, key drug interactions for DOACs consult summary of product characteristics.

Drug interactions

DOAC interactions are generally mediated via the cytochrome P450 isoenzyme system (CYP) and/or permeability glycoprotein (P-gp). However, some interactions can occur with medicines which also impair haemostasis. In addition to individual SPCs, the following provide guidance regarding interactions:

- Managing interactions with direct oral anticoagulants (DOACs) – SPS - Specialist Pharmacy Service.
- Medicines Complete: Stockley's Drug Interactions (subscription required).

Assessment of stroke and bleeding risks in NV-AF

Assess the risk of bleeding and stroke at least annually (or more frequently if clinical changes occur affecting anticoagulation or bleeding risk) when:

- considering starting anticoagulation in people with NV-AF and
- reviewing people already established on anticoagulation.

Assess the person's stroke risk using the CHA2DS2VASc assessment tool.
Assess the risk of bleeding using the ORBIT bleeding risk tool.

For most people the benefit of anticoagulation outweighs the bleeding risk. Do not withhold anticoagulation solely because of a person's age or their risk of falls (careful monitoring of bleeding risk is important). Where available use the ORBIT bleeding risk score in all AF patients to assess bleeding risk. If the ORBIT tool is not embedded within the clinical system, it can be accessed via smartphone, desktop. Modifiable factors that reduce risk should be addressed. ORBIT is the preferred tool as it has a higher accuracy in predicting absolute bleeding risk than other bleeding risk tools (in NV-AF).

DOAC Follow-up Monitoring and General Review

Patient Group	Creatinine & Electrolytes to calculate Creatinine Clearance (CrCl) Full Blood Count (FBC) Liver Function Test (LFT)	Weight *(Annually, unless suspect significant weight loss/gain)*	Blood Pressure *(for HASBLED; if ORBIT tool unavailable)*
CrCl > 60 ml/min	Annually	Annually	Annually
Age ≥ 75 years or frail	4 monthly	Annually	Annually
CrCl < 60 ml/min Frequency of monitoring guided by the CrCl divided by 10.	6 monthly	Annually	Annually
CrCl < 40 ml/min Frequency of monitoring guided by the CrCl divided by 10.	4 monthly	Annually	Annually
CrCl < 20 ml/min Frequency of monitoring guided by the CrCl divided by 10.	2 monthly	Annually	Annually

Special considerations: Consider more frequent monitoring where expected Renal and/or Hepatic function changes, or concomitant medicines prescribed which may affect function, intercurrent illness occurs.

Use the Cockcroft-Gault equation to estimate CrCl and not the eGFR (calculator: Creatinine Clearance (Cockcroft-Gault Equation) (mdcalc.com).

Caution: *GP clinical system embedded Cockcroft-Gault calculators automatically use the last patient parameters which may not be up to date.* Request new C&Es and weight and use up to date patient parameters to calculate CrCl. Ensure the height recorded is an adult height (after the patient is age 18 years) (See Appendix 2: Calculating Creatinine Clearance for DOAC dosing decisions for guidance on using GP clinical system embedded calculators).

At least annual assessment of stroke and bleeding risk (see "Direct Oral Anticoagulant Follow up Monitoring and General review"). Recalculate CHA2DS2-VASc and ORBIT scores to confirm if risk/benefit remains unchanged:

- Enquire about the presence of bleeding (Nuisance or Impaction on Quality of Life).
- Identify and minimise any modifiable risk factors.
- Confirm anticoagulation is still appropriate.

General review

Patient counselling

At initiation, post one month and three months thereafter (or after dose changed). Patient information leaflet Appendix 3 can support discussion.
NICE recommendation: Initially every three months but can be extended dependent on patient factors such as age, renal function, co-morbidities.

The following should be discussed with all patients started on oral anticoagulation and should be documented in the patient record.

- Explain purpose, dose, frequency, timing of doses and duration of treatment.
- Assess for features of thromboembolic events, such as symptoms of stroke, or breathlessness (which may suggest a pulmonary embolism).
- Importance of compliance and adherence, and what to do if doses are missed.
- Explain serious side effects: Seek urgent medical attention if patient develops severe bleeding, e.g., blood in faeces, vomit or sputum, vaginal bleeding, if they fall or injure themselves (particularly if hit their head), due to the increased risk of bleeding or unusual headaches.
- Need to inform medical staff that they are taking DOAC if prescribed new medications or surgery /or if invasive procedures (including dental extractions) being planned. Bleeding risk if DOAC started immediately post op.
- Possible interactions with other drugs including herbal remedies, advise patient to read patient information leaflet and discuss with pharmacist or doctor before taking any over the counter remedies or medicines.
- Manage any modifiable risk factors for bleeding, such as uncontrolled hypertension, reversible causes of anaemia.
- Avoid aspirin or NSAIDs (unless clinically indicated).
- Advice on alcohol (risk of bleeding) – ensuring intake is within government recommendations.
- Advise patient to seek advice if planning to become pregnant or breastfeed.
- Referral to Community Pharmacy New Medicine Service: suitable for patients prescribed anticoagulants for the first time.
- Monitoring and review: review of treatment and blood tests at least once a year but may be more frequent for some patients (see "Direct Oral Anticoagulant Follow up Monitoring and General review").

Opportunistically at each routine appointment: Check for side effects/bleeding issues and patient adherence to therapy.

Patient declines anticoagulation

Review stroke and bleeding risks annually and re-discuss the risks vs benefits of oral anticoagulation. Ensure all reviews and decisions are documented.

Monitoring during unprecedented events e.g. pandemic

Patients taking DOACs should have appropriate primary care-based prescribing and monitoring in place:

- Telephone and/or video triage, instead of face-to-face consultations, should be in place to support patients, for example for those experiencing bleeding symptoms in primary care.
- Standard renal monitoring should be undertaken at least annually, and more regularly in people with renal dysfunction, over the age of 75 years or who are frail.
- Specialist support for primary care prescribers should be available should issues arise during DOAC treatment.

Community Pharmacy

Community Pharmacy teams can play a significant role in preventing harm by providing patients or carers where appropriate, with information and support.

Proactively discuss the anticoagulant medicine with the patient or representative to ensure safe and effective use, including the signs of over-anticoagulation and the need to check with a doctor or pharmacist prior to starting any OTC medicines, supplements or herbal remedies.

Ensure patients carry their DOAC alert card contained in each pack of dispensed medicine.

Opportunistically at each patient or carer contact: Check for side effects/bleeding issues and patient adherence to therapy.

Inform the GP practice team where:

- Patients regularly prescribed or purchasing an oral NSAID and prescribed an oral anticoagulant.
- Patients noted to have poor adherence to treatment, e.g. verbally confirmed or based on uncollected prescription items.

Switch to or from another oral anticoagulant

See table in Appendix 1: DOACs comparison.

Sources used

Management | Anticoagulation - oral | CKS | NICE

DOACs (Direct Oral Anticoagulants) monitoring – SPS - Specialist Pharmacy Service

Managing interactions with direct oral anticoagulants (DOACs) – SPS - Specialist Pharmacy Service

Using oral anticoagulants during breastfeeding – SPS - Specialist Pharmacy Service

Summary of product characteristics for Apixaban (Eliquis®). Accessed via emc.

Summary of product characteristics for Rivaroxaban (Xarelto®). Accessed via emc.

Summary of product characteristics for Dabigatran (Pradaxa®). Accessed via emc.

Summary of product characteristics for Edoxaban (Lixiana®). Accessed via emc.

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Appendix 1: DOACs comparison

All four DOACs have varying contraindications and cautions. Additionally, they have variations in pharmacokinetics and safety profiles that may be clinically significant for some patient groups.

Hence depending on individual patient factors and specialist advice prescribe for NV-AF as per information below.

Please refer to BNF and SPCs for more detailed and latest prescribing information.

DOAC	Apixaban	Rivaroxaban	Edoxaban	Dabigatran
Licensed Standard dose	**5mg TWICE daily**	**20mg ONCE daily** with food	**60mg ONCE daily**	**150mg TWICE daily**
Reduced dose	**2.5 mg TWICE daily** If 2 or more of the following risk factors: • age ≥ 80 yrs • weight ≤ 60kg • serum creatinine ≥ 133 micromol/L **Or** CrCl 15 - 29ml/min Apixaban has the lowest renal excretion percentage of all the DOACs.	**15mg ONCE daily** with food If the following risk factor: • CrCl 15 - 49 ml/min	**30mg ONCE daily** If 1 or more of the following risk factors: • CrCl 15 - 49 ml/min • Weight ≤ 60kg • concurrent treatment with any of the following P-glycoprotein (P-gp) inhibitors: ciclosporin, dronedarone, erythromycin, or ketoconazole.	**110mg TWICE daily** If 1 or more of the following risk factors: • age ≥ 80yrs • taking verapamil **Or** Consider reducing based on individual assessment of thromboembolic and bleeding risk if the following: age 75-80yrs CrCl 30-50ml/min patients with gastritis, oesophagitis, or gastroesophageal reflux patients increased bleeding risk
Use in renal impairment Licensed doses as above	CrCl < 15mL/min: Contraindicated	CrCl < 15mL/min: Contraindicated	CrCl < 15mL/min: Contraindicated	CrCl < 30mL/min: Contraindicated
Use in hepatic impairment	Check individual SPC.	Check individual SPC.	Check individual SPC.	Check individual SPC.
Extremes of body weight	No dose adjustment required for low body weight alone, Licensed dose: Usual dose	No dose adjustment for adults. Licensed dose: Usual dose	Dose adjustment required if weight ≤ 60kg. Licensed dose: 30mg once daily	No dose adjustment. Close clinical surveillance body weight <50 kg.

DOAC	Apixaban	Rivaroxaban	Edoxaban	Dabigatran
High creatinine clearance (>95ml/min)	**Not clinically significant for any of the DOACs (local advice).** Rationale: All DOACs have some degree of renal clearance and all three Factor X inhibitors show the same trend to decreasing efficacy with increasing creatinine clearance.	**Not clinically significant for any of the DOACs (local advice).** Rationale: All DOACs have some degree of renal clearance and all three Factor X inhibitors show the same trend to decreasing efficacy with increasing creatinine clearance.	**Not clinically significant for any of the DOACs (local advice).** Rationale: All DOACs have some degree of renal clearance and all three Factor X inhibitors show the same trend to decreasing efficacy with increasing creatinine clearance.	**Not clinically significant for any of the DOACs (local advice).** Rationale: All DOACs have some degree of renal clearance and all three Factor X inhibitors show the same trend to decreasing efficacy with increasing creatinine clearance.
Switching from warfarin	Stop warfarin. If the INR is less than 2, start DOAC. If the INR is between 2 and 2.5, start DOAC the next day. If the INR is greater than 2.5, wait until the person's INR has dropped to less than 2 before starting DOAC. Inform community nursing teams if they have been monitoring INR or administering warfarin.	Stop warfarin. If the INR is less than 2, start DOAC. If the INR is between 2 and 2.5, start DOAC the next day. If the INR is greater than 2.5, wait until the person's INR has dropped to less than 2 before starting DOAC. Inform community nursing teams if they have been monitoring INR or administering warfarin.	Stop warfarin. If the INR is less than 2, start DOAC. If the INR is between 2 and 2.5, start DOAC the next day. If the INR is greater than 2.5, wait until the person's INR has dropped to less than 2 before starting DOAC. Inform community nursing teams if they have been monitoring INR or administering warfarin.	Stop warfarin. If the INR is less than 2, start DOAC. If the INR is between 2 and 2.5, start DOAC the next day. If the INR is greater than 2.5, wait until the person's INR has dropped to less than 2 before starting DOAC. Inform community nursing teams if they have been monitoring INR or administering warfarin.
Switching from warfarin: pragmatic approach – local advice	**Switching from warfarin: pragmatic approach – local advice.** If INR >2.5 stop warfarin for 3 days and start DOAC after 3 days. Inform community nursing teams if they have been monitoring INR or administering warfarin.	**Switching from warfarin: pragmatic approach – local advice.** If INR >2.5 stop warfarin for 3 days and start DOAC after 3 days. Inform community nursing teams if they have been monitoring INR or administering warfarin.	**Switching from warfarin: pragmatic approach – local advice.** If INR >2.5 stop warfarin for 3 days and start DOAC after 3 days. Inform community nursing teams if they have been monitoring INR or administering warfarin.	**Switching from warfarin: pragmatic approach – local advice.** If INR >2.5 stop warfarin for 3 days and start DOAC after 3 days. Inform community nursing teams if they have been monitoring INR or administering warfarin.

DOAC	Apixaban	Rivaroxaban	Edoxaban	Dabigatran
Switching from DOAC to DOAC	Discontinue OLD DOAC and commence NEW DOAC at the time that the next scheduled dose of NEW DOAC would be due.	Discontinue OLD DOAC and commence NEW DOAC at the time that the next scheduled dose of NEW DOAC would be due.	Discontinue OLD DOAC and commence NEW DOAC at the time that the next scheduled dose of NEW DOAC would be due.	Discontinue OLD DOAC and commence NEW DOAC at the time that the next scheduled dose of NEW DOAC would be due.
Use in a medicines compliance aid	Stable in a dosette box.	Stable in a dosette box.	Stable in a dosette box.	Not suitable for use in compliance aids.
Swallowing difficulties	Tablets may be crushed and suspended in water or apple juice or mixed with apple puree and administered immediately.	Tablets may be crushed and mixed with water or apple puree immediately prior to use and administered orally (or via gastric tubes) - immediately followed by food. **Poor oral intake or inability to take with food can cause treatment failure.**	Tablets may be crushed and mixed with water or apple puree and immediately administered orally.	Capsules should not be opened- increased risk of bleeding (oral bioavailability may be increased by 75 % when the pellets are removed from the capsule shell).
Administration through gastric tube	May be administered through a nasogastric tube - tablets can be crushed and suspended in 60mL of water or G5W and delivered immediately	Granules for oral suspension are licensed for nasogastric and PEG tubes. Not suitable for administration via enteral feeding tubes terminating beyond the stomach (i.e. in the duodenum or jejunum) due to decreased absorption when given in this manner and thus not appropriate for NJ / PEJ / PEGJ tubes.	May be administered through a nasogastric tube - tablets may be crushed and suspended in a small amount of water and immediately delivered through a gastric tube after which it should be flushed with water.	Capsules should not be opened- increased risk of bleeding (oral bioavailability may be increased by 75 % when the pellets are removed from the capsule shell).

DOAC	Apixaban	Rivaroxaban	Edoxaban	Dabigatran
Pregnancy (or planning to conceive) **Refer to specialist anticoagulation services.**	Not recommended during pregnancy.	Contraindicated in pregnancy	Not recommended during pregnancy.	Should not be used during pregnancy unless clearly necessary.
Breastfeeding. For further supporting information see SPS resource: Using oral anticoagulants during breastfeeding.	Not recommended for use during breastfeeding.	Can be used during breastfeeding. Infant monitoring required.	Not recommended for use during breastfeeding.	Can be used during breastfeeding. Infant monitoring required.
Drug Interactions. For complete information consult BNF, SPC and resources mentioned in drug interactions.	Metabolised by cytochrome P450 enzyme CYP3A4 and substrates for P-gp.	Metabolised by cytochrome P450 enzyme CYP3A4 and substrates for P-gp.	Substrate for P-glycoprotein (P-gp).	Substrate for P-glycoprotein (P-gp).
Patient Factors favouring one DOAC over another	If high risk of GI bleed (Orbit Score ≥4). If renal impairment (CrCl around 50ml/min or lower)	Vulnerable patient who has once daily care provider to administer medicines.	Vulnerable patient with once daily care provider to administer medicines. Weakly metabolised by CYP3A4. Where warfarin not an option, potentially advantageous (cautiously) with certain drug groups, e.g. antiepileptics (phenytoin, carbamazepine).	

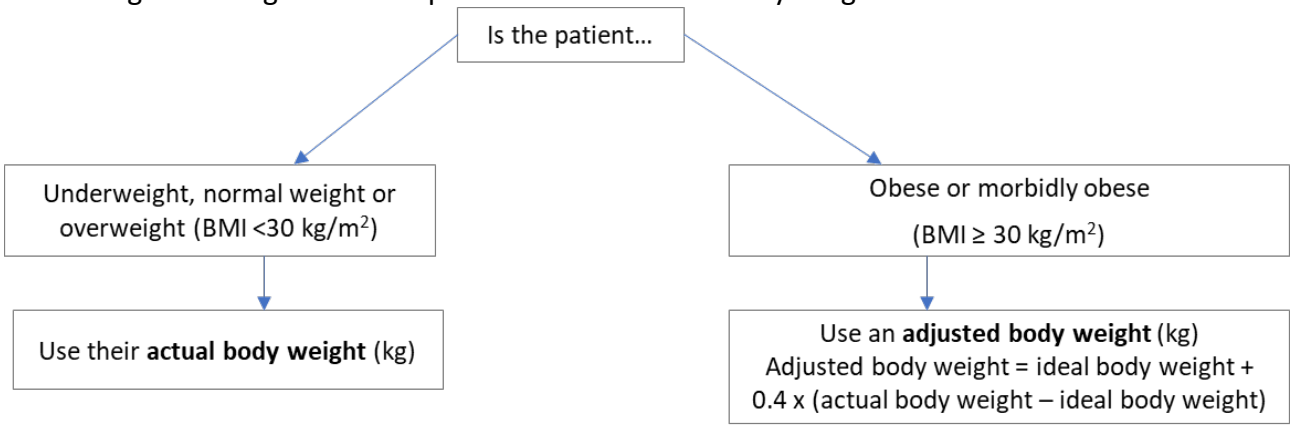
Appendix 2: Calculating Creatinine Clearance for DOAC dosing decisions

The Cockcroft and Gault equation for calculating CrCl

For DOAC dosing decisions estimated glomerular filtration rate (eGFR) should not be used. The **Cockcroft-Gault (C&G) equation** is recommended.

$$\text{CrCl (ml/min)} = \frac{(140\text{-age}) \times \text{weight}^*}{\text{Serum creatinine (micromol/L)}} \times 1.23 \text{ (male) or } 1.04 \text{ (female)}$$

Parameters for creatinine clearance calculation

Parameter	Guidance
Weight	**Use weight measured within the last 12 months** • **If a weight loss/gain is suspected, a more recent weight should be obtained.** DOAC clinical trials used actual body weight when estimating CrCl for patients. It is recognised that there are inaccuracies in estimating CrCl using the C&G equation at extremes of body weight.  **To ensure consistency across settings, when recording CrCl state if ACTUAL or ADJUSTED weight was used.**
Serum creatinine	**Ensure from the last 3, 4, 6, or 12 months depending on the degree of renal impairment.**
Height	Ensure the height recorded is after the patient is age 18 years i.e., an adult height.

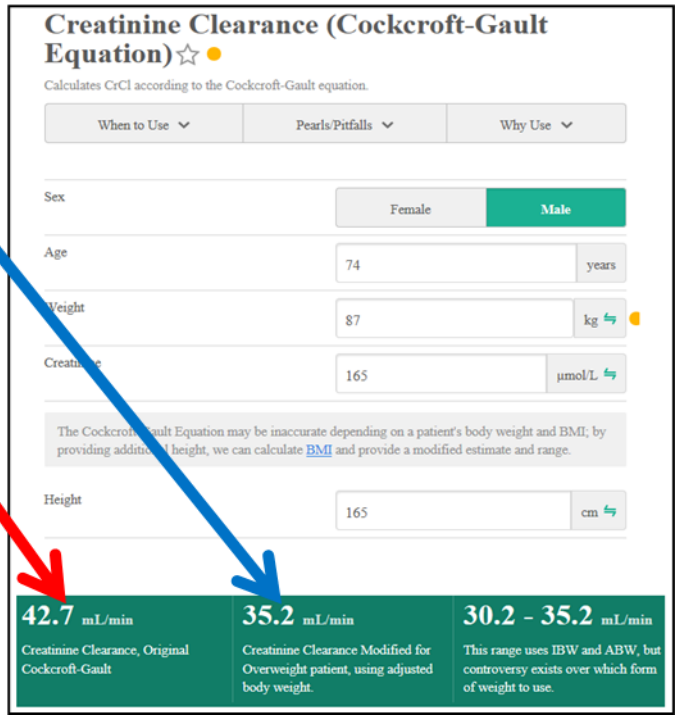
Where a patient's CrCl places them on the cusp of a dose change, consider other risk factors such as stroke, bleeding risk, co-morbidities and drug interactions before making a dosing decision. Keep in mind, for most patients, the risks of not anticoagulating can massively outweigh other risks.

Method 1: MD+CALC on line calculator to calculate Renal Function when Prescribing DOACs

The [MD+CALC on line calculator] can be used to calculate patients CrCl.

On the dose calculator this box will calculate a CrCl based on a patient's adjusted body weight (ABW)

On the dose calculator this box will calculate a CrCl based on a patient's actual body weight.



Method 2: GP clinical system calculator to calculate Renal Function when Prescribing DOACs

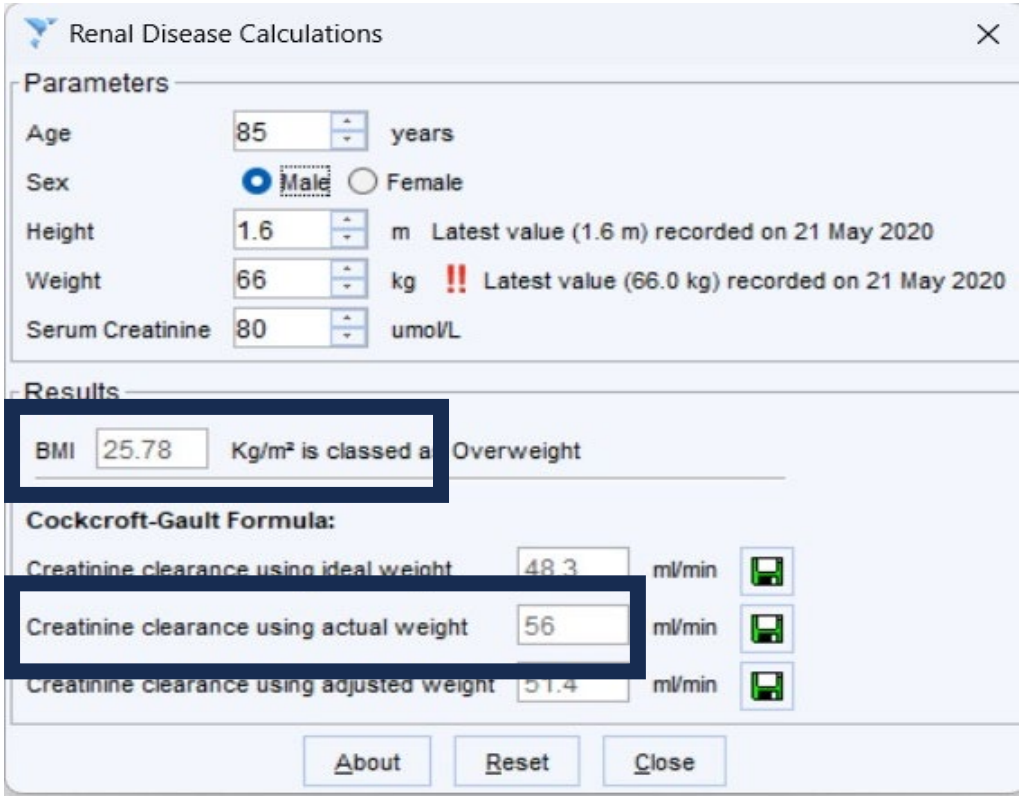
SystmOne and EMIS have an inbuilt Cockcroft-Gault based renal function calculators which can be used to dose DOACs.

Using SystmOne (S1)

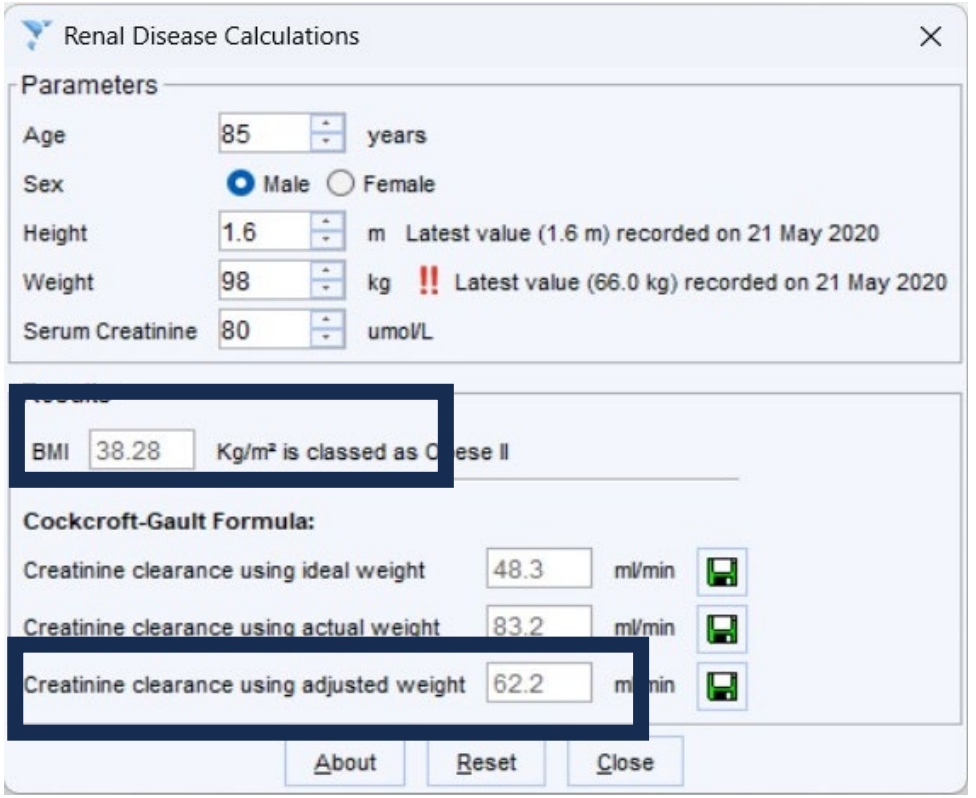
From Clinical Tools tab select the “Renal disease calculations”.

If parameters are not up to date request bloods (C&Es) and weight. Once the parameters are up to date select and apply the Cockcroft-Gault Formula depending on the BMI.

If the BMI < 30 use the actual weight and save.



If BMI > 30 use the adjusted weight and save



Using EMIS

The EMIS web CrCl calculator will default to using ideal body weight unless the patient **already has a DOAC prescribed on their record in which case it will use the ACTUAL bodyweight,** hence when initiating DOACs there is potential for under-dosing.

Initiating a DOAC in EMIS

- Calculate CrCl using the MD+CALC online calculator.
- Add the DOAC dosage to the Acute/Repeat list (do not issue – issue later).
- Recalculate CrCl using the EMIS calculator and save in the notes.

EMIS and CrCl in patients with a BMI > 30kg/m2

As already mentioned, where either Apixaban, Edoxaban or rivaroxaban are already on the medication list, the template will calculate the creatinine clearance using **actual body weight**.

Hence for patients with a BMI > 30kg/m2 please use the MD+CALC on line calculator to calculate CrCl and if applicable add that the CrCl has been calculated using the ADJUSTED body weight (see Appendix 2: Calculating Creatinine Clearance for DOAC dosing decisions).

Always refer to the individual drug summary of product characteristics (SPCs) concerning DOAC dosing for stroke prevention in non-valvular atrial fibrillation (NVAF).

Appendix 3: DOAC Patient Information Leaflet

Patient Information for people taking Direct oral anticoagulants (DOACs) in Non-Valvular Atrial Fibrillation

What are DOACs and who are they recommended for?

Direct oral anticoagulants (DOACs) are anticoagulant medicines and help to prevent blood clots. They're given to people at a high risk of getting clots, to reduce their chances of developing serious conditions such as strokes and heart attacks.

They're sometimes called "blood-thinning" medicines, although they don't actually make the blood thinner.

How to take my DOAC?

You should take your medication according to the label on the box your medication is supplied in. Take your medication at about the same time every day.

Depending on the active ingredient this could be once or twice a day, with or without food (except rivaroxaban which should be taken with food).

The anticoagulant effect of DOACs fades 12-24 hours after the last dose so if you miss a dose, you're not protected against a stroke or blood clot.

The length of time you need to keep taking your medicine for depends on why it's been prescribed. In many cases, treatment will be lifelong.

If you have difficulty swallowing the tablet whole, talk to a doctor or pharmacist about other ways to take your DOAC.

What if I take too much?

Ask a pharmacist, doctor, anticoagulant clinic or 111 if out of hours for advice straight away. Taking too much puts you at risk of bleeding.

What if I forget to take a dose?

Once daily dose - Take the missed dose as soon as you remember on the same day and continue the following day with your once-a-day dose as usual. Do not take a double dose on the same day.

Twice daily dose - Only take the missed dose if it is more than SIX hours until your next one. If it's due less than six hours later, do not take the missed dose. Just take your next dose as normal. Do not take more than two doses on the same day.

If you often forget doses, it may help to set an alarm to remind yourself. You could ask a pharmacist for advice on other ways to remember taking your medicines.

Can I drink alcohol with a DOAC?

You can drink alcohol in moderation in line with NHS guidance while taking a DOAC, but heavy drinking, especially binge drinking, can make you more likely to bleed.

Driving and using machines

DOACs have no effects on your ability to drive or use machines.

Are there any other precautions I need to take?

Always speak to your doctor or pharmacist before taking any other medicine. For a full list of medicines that you should avoid, check the patient information leaflet that comes with your medicine.

Try to avoid minor injuries and cuts and grazes. Take care and when shaving and use protection when gardening or playing sports.

For women only

Pregnancy - do not become pregnant while taking anticoagulant therapy. Please consult your GP regarding contraception if appropriate.

If you think you may be pregnant contact your GP immediately for advice as these medicines should not be taken during pregnancy.

Breast feeding - you should not breast feed whilst taking these medicines.

Periods - you may experience heavier periods while you are taking oral anticoagulants and may wish to discuss this with your GP, nurse or pharmacist.

Follow up and monitoring

You should have blood tests and weight check **at least** annually, to ensure your DOAC is the best treatment and safe for you. You can arrange this with your GP Practice who can advise how often your need these.

Side effects

Like all medicines, DOACs can cause side effects, although not everyone gets them. Side effects are usually mild and don't last long. The most common side-effects are indigestion and/or minor bruising. Other common side-effects include:

- tiredness and lack of energy, shortness of breath, noticeable heartbeats (heart palpitations) and paler than usual skin.
- feeling dizzy or light-headed.

Speak to a doctor or pharmacist on what to do if side effects are bothering you or do not go away.

For a full list of possible side-effects see the leaflet that comes with your pack.

Bleeding and what to do about it?

While DOACs have enormous benefits, it is important to be aware that DOACs may cause bleeding. This is because while you are taking a DOAC, your blood will not clot as easily.

Less serious bleeding

It is usual to bleed more easily than normal while you are taking a DOAC. The kind of bleeding you might have includes:

- periods that are heavier and last longer than usual.
- bleeding for a little longer than usual if you cut yourself.
- occasional nosebleeds (that last for less than 10 minutes).
- bleeding from your gums when brushing your teeth.
- bruises that come up more easily and take longer to fade than usual.

This type of bleeding is not dangerous and should stop by itself. If it happens, keep taking your DOAC, but tell a doctor if the bleeding bothers you or does not stop.

General advice on DOACs and managing less serious bleeding can be found on Anticoagulant medicines - NHS (www.nhs.uk).

When to seek medical advice

Serious bleeding

Occasionally, you can have heavy bleeding which can be dangerous and needs urgent medical attention. It is therefore important to be aware of the possible signs and symptoms of excessive bleeding:

- passing blood in your urine.
- passing blood when you poo or having black poo.
- severe bruising.
- prolonged nosebleeds (lasting longer than 10 minutes).
- vomiting blood or coughing up blood.
- sudden severe back pain.
- difficulty breathing or chest pain.
- in women, heavy or increased bleeding during your periods, or any other bleeding from your vagina.
- unexplained tiredness.

Warning

If you experience any bleeding event that does not stop by itself or if you experience signs of excessive bleeding (exceptional weakness, tiredness, paleness, dizziness, headache or unexplained swelling) call 999 for an ambulance OR go to your nearest accident and emergency (A&E) department.

Alert card

You will need to carry an anticoagulant alert card with you at all times. If you have an accident, it is important that the person treating you knows you are taking an anticoagulant.

Each pack of DOAC tablets includes an alert card.

Summary of key points

- Do **not** stop taking your DOAC without talking to a doctor first, because your DOAC protects against blood clots and strokes.
- DOACs (depending on the active ingredient) should be taken regularly once or twice a day preferably at the same time(s) each day.
- Never take more than the prescribed dose of DOAC per day.
- Do not take any other medication without consulting a doctor or pharmacist, not even short-term painkillers, vitamins, supplements or herbal remedies that you can get without prescription.
- Alert a dentist, surgeon or another clinician before any procedure.
- Drinking heavily, especially binge drinking lots of alcohol in one go, is dangerous while taking a DOAC. The alcohol can increase the risk of bleeding.

Important

Please refer to the leaflet and alert card inside each box of your DOAC pack for complete and up to date information.

Contact us

If you require further advice or have any queries regarding this information, please contact our **Patient Experience Team**. You can reach the team via cpicb.pet@nhs.net or by calling 0800 279 2535.