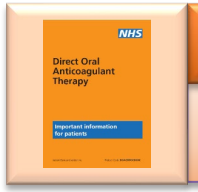

Medication Safety Series: MSS 11

Direct Oral Anticoagulants (DOACs) for inpatients

Apixaban, Dabigatran, Edoxaban, Rivaroxaban

Patient admitted – already prescribed DOACs:

As part of the medicines reconciliation process (prescriber) :

- Confirm & document on electronic patient record (EPR):
  - Indication (e.g. atrial fibrillation, pulmonary embolism, treatment of DVT etc);
  - Duration of treatment or date to be discontinued (if not long-term treatment);
  - Current dose - stable or initiation dose?
- Check for interactions, contraindications and review admission blood results – calculate CrCl to determine if dosage is appropriate (a recent eGFR can be used as a guide as to whether this needs to be checked) and check patient weight on admission (apixaban & edoxaban have weight-based dosing for some indications).
- Confirm VTE risk assessment has been completed as part of admission clerking.
- Add "significant medication alert" to EPR detailing anticoagulant prescribed.
- Add to regular prescription on Electronic Prescribing and Medicines Administration (EPMA), ensuring the following warnings are added "caution – risk of bleeding" for awareness in case of falls; "critical medication – do not omit any doses unless on advice of prescriber" and for rivaroxaban only – "take with food/meals" (appendix 1)

During admission:

- Falls and/or possible head injury – send to A&E to check for subdural haemorrhage – see head injury protocol / post falls protocol
- There are reversal agents for apixaban, dabigatran and rivaroxaban.
- Report suspected side effects – via yellow card reporting system

Administration / access to supplies throughout admission (nursing staff):

- DOACs are "Critical medicines" - ensure all doses are administered as prescribed and report **all** missed or refused doses immediately to prescriber, even if only one dose is missed.
- Ensure supplies are available / accessed out of hours from emergency drug cupboard.

Patient commencing a DOAC during admission (prescriber):

- Follow local formulary/guidelines when initiating treatment in an emergency e.g. suspected DVT/PE. (Apixaban or rivaroxaban tablets tend to be first/second line choice locally, dependent on indication).
- Caution with patients at increased risk of bleeding e.g. older people (>75 years), people with low body weight (≤ 60 kg) or renal impairment - review latest blood results – calculate CrCl to determine if dosage is appropriate (a recent eGFR can be used as a guide as to whether this needs to be checked).
- Check for interactions and any other possible contraindications.
- Confirm & document on EPR:
  - Indication (e.g. atrial fibrillation, pulmonary embolism, treatment of DVT etc);
  - Duration of treatment / date to be discontinued (if not long-term treatment);
  - Current dose - stable or initiation dose?
- Add "significant medication alert" to EPR detailing anticoagulant prescribed.
- Add to regular prescription on EPMA, ensuring the following warnings are added "caution – risk of bleeding" for awareness in case of falls; "critical medication – do not omit any doses unless on advice of prescriber" and for rivaroxaban only – "take with food/meals". (appendix 1)
- Alert pharmacy team to new prescription, for patient counselling (see overleaf).

On Discharge/prolonged leave:

- Check if any significant changes in weight since admission (apixaban and edoxaban have weight-based dosing for some indications).
- Counselling refresher to be offered for all DOAC patients (pharmacy)
- Ensure follow up has been arranged with GP as necessary.

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Review by	1st June 2029

Pharmacy Team Tasks:

- Ensure all prescriber/admission actions are completed for new and existing patients.
- Ensure all DOACs are flagged as **"critical medication"** on EPMA & monitor to ensure doses are not omitted - report **all** omitted doses to prescriber & on InPhase.
- Check for interactions, particularly if DOAC or interacting medicine is initiated on admission or on transfer from another provider e.g. acute hospital.
- Ensure patients prescribed new DOACs during admission are appropriately counselled (and document this on EPR), counselling may include:
  - importance of good compliance / what to do if miss a dose
  - risk of bleeding events / what to do if they occur,
  - common side effects
  - informing prescriber if any changes are made to medication
  - avoidance of using over the counter, supplements or herbal medicines without first checking with a healthcare professional
- Provide an anticoagulant (DOAC) book and alert card and advise on appropriate use.

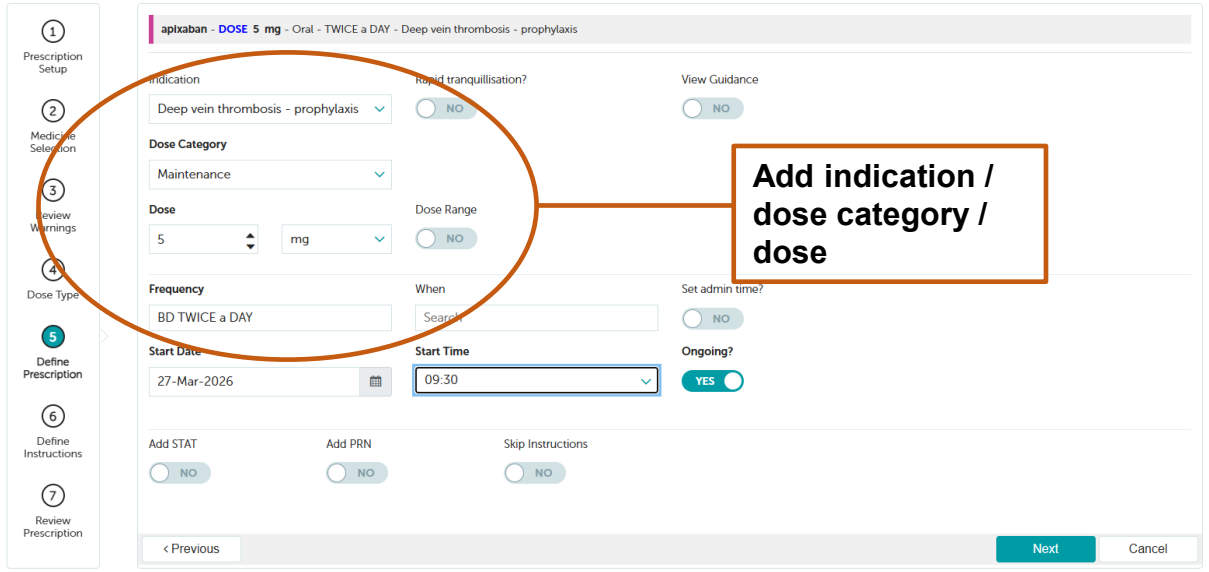
Monitoring (see SPS guidance)

- For complete monitoring requirements always refer to the individual Summary of Product Characteristics for each DOAC.
- FBC, U&Es and LFTs are required annually.
- U&E monitoring should occur more frequently if the patient is aged >75 years, frail, has renal impairment or an intercurrent illness that may affect renal function.

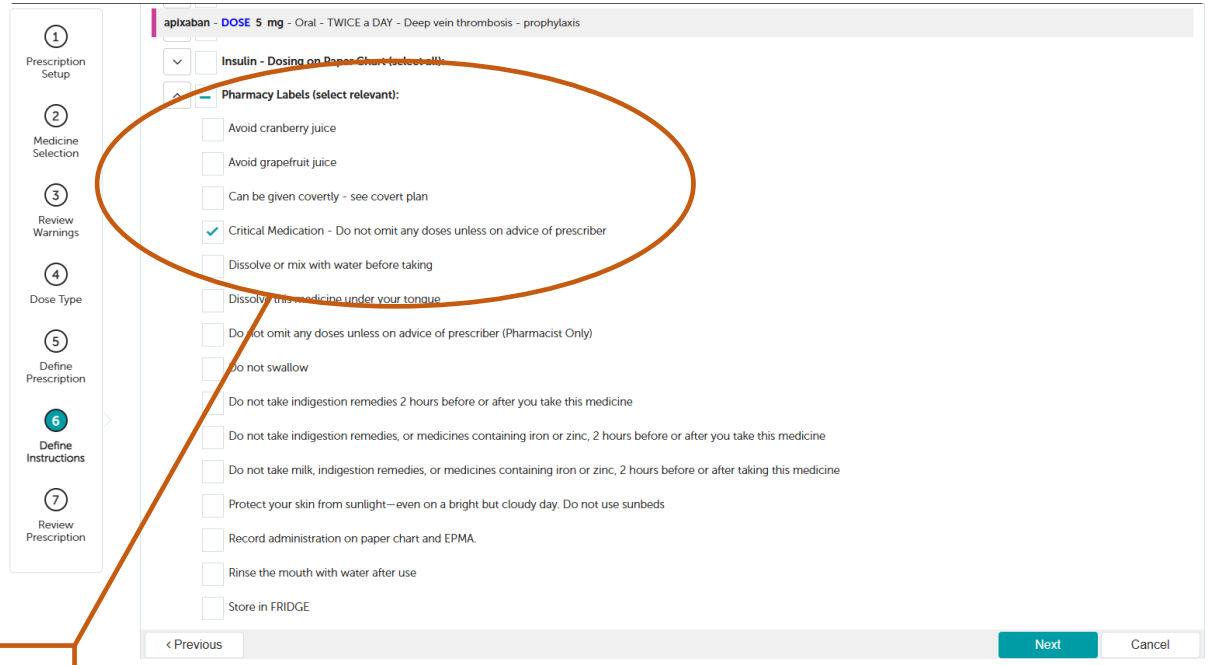
Signs and symptoms of serious bleeding:	**Common Interactions -** always check current BNF for full list of interactions with each drug

• Tar coloured stools, blood in urine, nosebleed, bleeding of gums or from cuts that take a long time to stop
• Bruising or bleeding under the skin with swelling or discomfort
• Headache, dizziness, tiredness, paleness or weakness
• Coughing up blood or vomiting blood or material that looks like coffee grounds
• Loss of consciousness or drowsiness
In the event of a bleeding event which does not stop on its own immediately seek medical attention and do not give any more doses until reviewed
	• **Increased bleeding risk**
	  ○ **Antidepressants** (e.g., SSRIs)
	  ○ **Antiplatelet drugs** (e.g., aspirin, clopidogrel)
	  ○ **Systemic steroids**
	  ○ **NSAIDs** (e.g., diclofenac, ibuprofen, mefenamic acid, naproxen)
	• **HIV medication** (e.g., ritonavir)
	• **Strong enzyme inhibitors** (e.g., ciclosporin, erythromycin, ketoconazole, itraconazole)
	• **Strong enzyme inducers** (e.g., rifampicin, phenytoin, carbamazepine, phenobarbital)
	• **St. John's Wort**

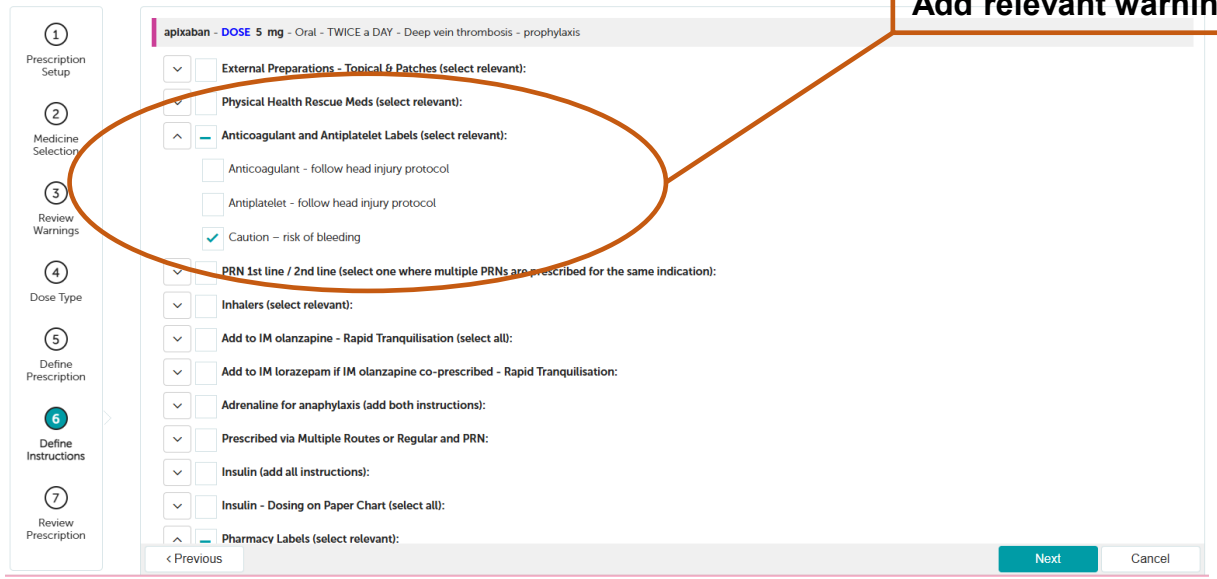
Appendix 1: Prescribing DOACs and adding relevant warnings to EPMA



Add indication / dose category / dose



Add relevant warnings



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