Medication Safety Series: MSS 5

Warfarin for in-patients

journey to change

NHS
Tees, Esk and Wear Valleys
NHS Foundation Trust

Patient admitted – already taking warfarin:

As part of the medicines reconciliation process (prescriber) :

- Confirm from either the yellow anticoagulant book or the usual anticoagulant monitoring team (appendix 2) & document on electronic patient record (EPR):
  - Indication (e.g. atrial fibrillation, pulmonary embolism)
  - Duration of treatment (including date of initiation/date to be discontinued if appropriate)
  - Desired therapeutic range and target INR (e.g. range 2-3, target 2.5)
  - Current dose
  - Date of last INR and INR result
  - Date of next monitoring appointment (in community)
  - Name/contact details of usual anticoagulant monitoring team
  - Date of next INR check and agreed frequency of INR monitoring during admission
- Inform the usual anticoagulant monitoring provider (appendix 2) of the patient's admission to hospital.
- Add “significant medication alert” to EPR detailing anticoagulant prescribed.
- Add warfarin to regular prescription on Electronic Prescribing and Medicines Administration (EPMA) system with an appropriate dose range, this will display “as per chart”, select “warfarin attribute” to link to paper chart and ensure the following warnings are added “caution – risk of bleeding” in case of falls; “critical medication – do not omit any doses unless on advice of prescriber” (see appendix 1).
- Complete a paper “oral anticoagulation supplementary chart” detailing the dose to give each day, ensuring this is completed until next INR test is due.

Patient started on warfarin during admission (prescriber) :

- Check for interactions and any other possible contraindications.
- Confirm & document on EPR:
  - Indication (e.g. atrial fibrillation, pulmonary embolism)
  - Duration of treatment (including date of initiation/date to be discontinued if appropriate)
  - Desired therapeutic range and target INR e.g. range 2-3, target 2.5
  - Starting dose
  - Date of next INR check and agreed monitoring frequency
- Add “significant medication alert” to EPR detailing anticoagulant prescribed.
- Add to regular prescription on EPMA system, with an appropriate dose range, this will display “as per chart” select “warfarin attribute” to link to paper chart and ensure the following warnings are added “caution – risk of bleeding” in case of falls; “critical medication – do not omit any doses unless on advice of prescriber”. (see appendix 1)
- Complete a paper “oral anticoagulation supplementary chart” detailing the dose to give each day, ensuring this is completed until next INR test is due.
- The acute trust hospital team will advise on titration doses of warfarin, and LMWH cover during titration if required.
- Alert pharmacy team to new prescription, for patient counselling (see next page).

During admission:

- Falls and/or possible head injury – send to A&E to check for subdural haemorrhage – see head injury protocol / post falls protocol
- For patients who are non-compliant with warfarin, treatment with LMWH should be considered and re-titration of warfarin or an alternative as appropriate.

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

- Warfarin is a “Critical medicine” - 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 available / accessed out of hours from emergency drug cupboard.

Title	MSS5 – Warfarin in in-patients V3.0
Approved	28th May 2026
Review by	1st June 2029

Pharmacy Team Tasks:

- Ensure all prescriber/admission actions are completed for new & existing patients confirming that warfarin is prescribed correctly, a paper chart has been completed & next INR test is planned.
- Ensure the following warnings have been selected on EPMA "caution – risk of bleeding" and **"critical medication"** & monitor to ensure doses are not omitted - report **all** omitted doses to prescriber and on InPhase.
- Check for interactions, particularly if warfarin or interacting medicine is initiated on admission or on transfer from another provider e.g. acute hospital.
- Ensure patients newly prescribed warfarin during admission are appropriately counselled & document this on EPR), counselling may include:
  - importance of good compliance with medication and monitoring appointments
  - what to do if they miss a dose
  - common side effects / risk of bleeding events / what to do if they occur
  - informing prescriber if any changes are made to medication
  - Potential for interactions and avoidance of using over the counter, supplements or herbal medicines without first checking with a healthcare professional
- Ensure patient has an anticoagulant booklet and alert card, advise on appropriate use.

On Discharge or prolonged leave:

- Usual (local for new patients) anticoagulant monitoring service should be contacted and advised of the patient's discharge (see Appendix 3). An appointment date and time should be arranged and recorded in the patient's anticoagulant book along with information on current dose and latest INR result.
- If a further supply of warfarin is required, the strength of warfarin tablets should be in line with the local policy (Appendix 3). Normally only 1 mg and 3 mg tablets are supplied.
- Discharge letter to include the following information:
  - Current dose
  - Date of last INR and INR result
  - Date and time of next appointment.
  - Name and contact details of usual anticoagulant monitoring service.
- Counselling refresher to be offered if the patient has commenced warfarin during their stay (pharmacy).

Signs and symptoms of serious bleeding:

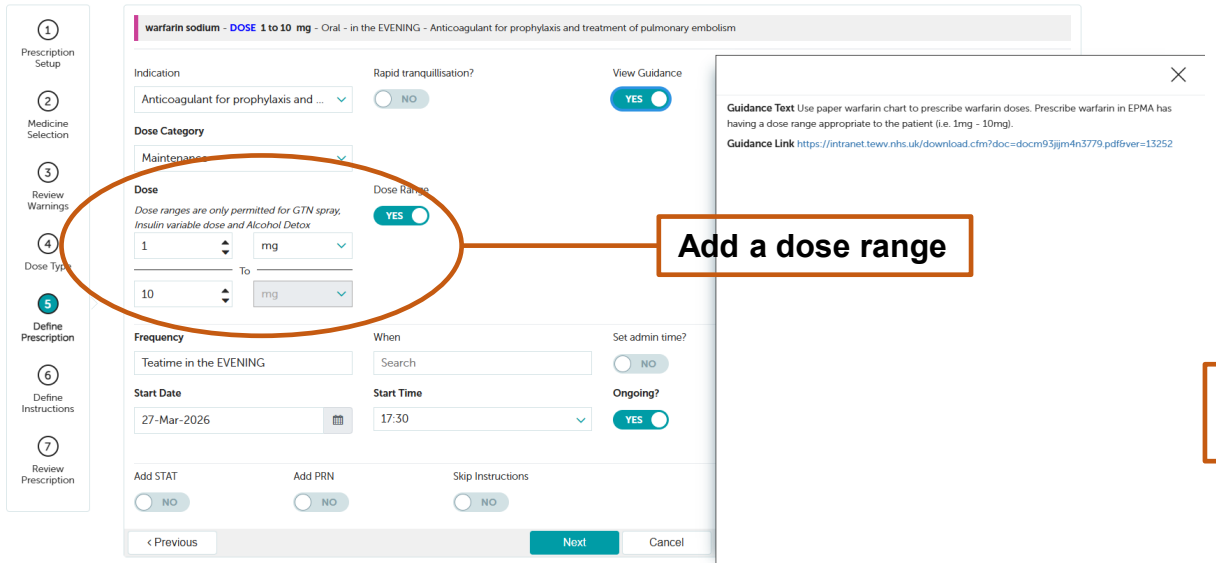
- Tar coloured stools, blood in urine, nosebleed, bleeding of gums or from cuts that take a long time to stop
- Bruising or bleeding under the skin with swelling or discomfort
- Headache, dizziness, tiredness, paleness or weakness
- Coughing up blood or vomiting blood or material that looks like coffee 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

Common Interactions - always check current BNF for full list of interactions with each drug

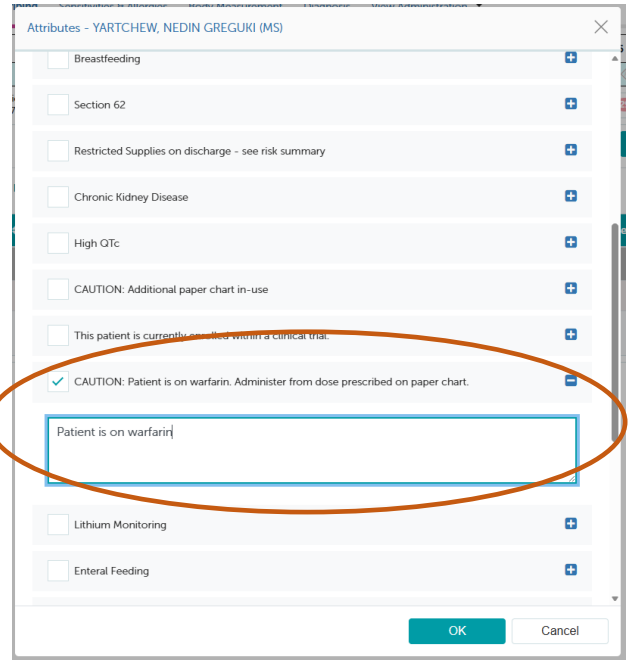
- **Increased bleeding risk**
  - **Antidepressants** (e.g., SSRIs)
  - **Antiplatelet drugs** (e.g., aspirin, clopidogrel)
  - **Systemic steroids**
  - **NSAIDs** (e.g., diclofenac, ibuprofen, mefenamic acid, naproxen)
- **HIV medication** (e.g., ritonavir)
- **Strong enzyme inhibitors** (e.g., omeprazole, erythromycin, ketoconazole, itraconazole)
- **Strong enzyme inducers** (e.g., rifampicin, phenytoin, carbamazepine, phenobarbital)
- **St. John's Wort, vitamin K supplements, cranberry juice**

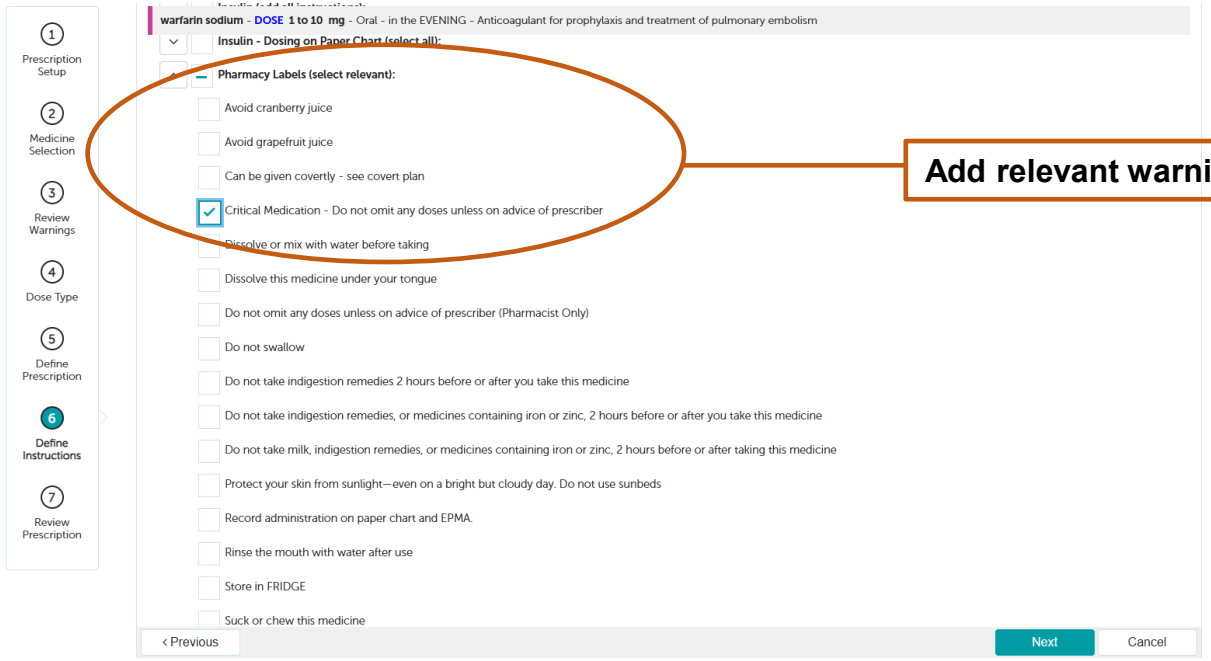
Appendix 1: Prescribing warfarin and adding relevant warnings to EPMA



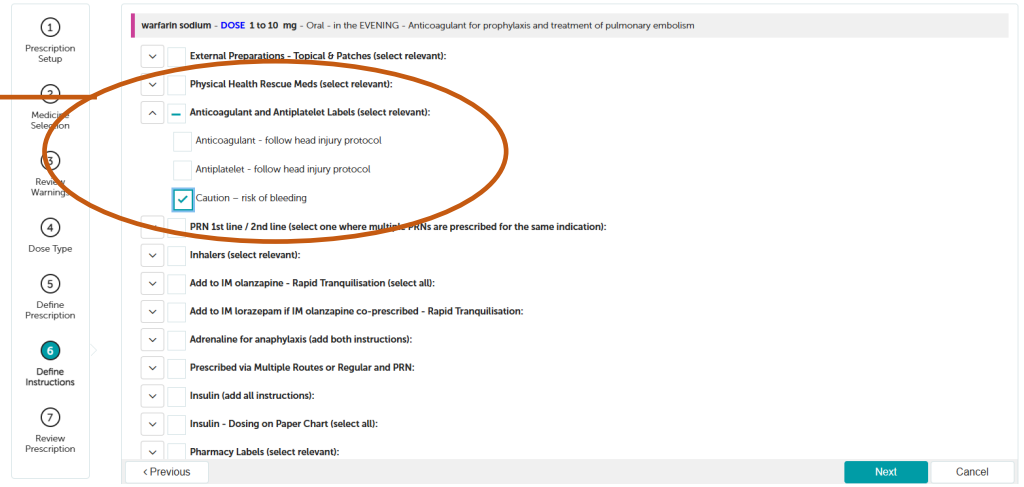
Add a dose range

Select “warfarin attribute”





Add relevant warnings



Title	MSS5 – Warfarin in in-patients V3.0
Approved	28th May 2026
Review by	1st June 2029

APPENDIX 2: Anticoagulant Service Providers

Tees Valley: Every GP practice in Tees Valley has warfarin monitoring services provided by Intrahealth (Tel. 0191 518 1564). The only patients retained by secondary care are unstable or complex, e.g. pregnancy.

Durham (patient choice of provider):

- Coxhoe Medical Practice, Durham (Tel. 0191 3770340)
- Intrahealth Ltd (Pharmacy) William Brown Centre, Peterlee. (Tel. 0191 518 1564) – mainly central Durham and villages around the Peterlee area.
- Chemcare/SE Gill Ltd Pharmacy (Stanley; Tel. 07985670087 9am till 1pm Monday to Friday; email enquiries: l.lydon@nhs.net - covers Peaseway Medical Centre, Newton Aycliffe; Station View Surgery, Bishop Auckland; Stanley Pharmacy; Consett Medical Centre; Seaham Primary Care Centre & housebound patients)
- South Durham Healthcare CiC (9 practices, contact GP practice directly: Bishops Close, Blackhall, Byron, Horden Group, Marlborough, Murton, Skerne, St Andrews)
- The Haven Medical Practice, Burnhope, Durham (Tel. 01207 268820)
- County Durham & Darlington Trust also provide an INR service as part of their Acute Contract.

York and North Yorkshire:

Scarborough, Whitby, Ryedale, Hambleton & Richmondshire (Northallerton and surrounds) – provided by GP practice

Harrogate & rural district - 12 practices have anti coagulation service provided by Harrogate district FT; Exceptions are Moss Practice, Masham, Springbank (Green Hammerton) and Beech House (Knaresborough) who provide their own service.

York & Selby - Intrahealth cover Beech Tree Surgery, Dalton Terrace Surgery, Escrick Surgery, Posterngate Surgery, Scott Road Medical Centre, Sherburn Group Practice, South Milford Surgery, Tadcaster Medical Centre, Unity Health. Remaining City of York practices provide anticoagulation services themselves.

APPENDIX 3: Secondary Care Anticoagulant/LMWH Supply Information

Trust	Warfarin supplied	Preferred LMWH
County Durham and Darlington NHS Foundation Trust	Usually only dispense 1 mg tablets. (500 micrograms tablets only for individual patients if pre-existing)	Enoxaparin
North Tees & Hartlepool NHS Foundation Trust	1 mg & 3 mg 500 micrograms & 5 mg tablet supplied on demand only	Tinzaparin – VTE thromboprophylaxis and treatment (Enoxaparin if eGFR < 30ml/min) Fondaparinux for ACS
South Tees Hospital NHS Foundation Trust	Generally, supply 1 mg and 3 mg. 5 mg stocked. 500 micrograms ordered only on request	Tinzaparin (Fondaparinux for certain conditions/patients unable to take tinzaparin)
York Teaching Hospital NHS Trust (including Scarborough Hospital)	Full range stocked, but generally restrict discharge prescriptions to 1 mg & 3 mg	Enoxaparin Fondaparinux for ACS
Harrogate and District NHS Foundation Trust	1 mg & 3 mg 500 micrograms tablets not stocked 5 mg tablet only supplied to patients if on a higher dose	Enoxaparin