

Livewell Southwest

**Anticoagulation: Policy for the Safe  
Prescribing, Dispensing and Administration  
of Oral and Parenteral Anticoagulants**

Version No 2.0

Review: May 2019

**Notice to staff using a paper copy of this guidance**

**The policies and procedures page of LSW intranet holds the most recent version of this document and staff must ensure that they are using the most recent guidance.**

**Author: Chief Pharmacist / Clinical Pharmacist**

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## Reader Information

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| <b>Author</b>                              | This policy is based on the PHNT policy for which the lead responsibility lies with Dr Tim Nokes, Consultant Haematologist. The PHNT policy was written by Charlotte Carvell, Anticoagulant Specialist Pharmacist, in consultation with Tim Nokes, Consultant Haematologist. The policy has been reviewed and ratified by the Thrombosis Committee and the Medicines Governance Committee at PHNT<br>Steve Cooke, Chief Pharmacist, LSW has adapted the policy for use by LSW. There have been some changes required following the issue of a rule 28 by the Coroner in February 2016, these are incorporated into version 2. |
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| <b>References / Source</b>                   | <ol style="list-style-type: none"> <li>1. National Patient Safety Agency (NPSA) Safer Practice Notice no. 18 (Mar 2007) "Actions that can make anticoagulant therapy safer"</li> <li>2. Plymouth Hospitals NHS Trust "Anticoagulation: Safe prescribing, dispensing and administration of oral and parenteral anticoagulants" v.2 Mar 2015</li> <li>3. Livewell SW IntraNET "Safe and Secure Handling of Medicines Guidelines" v.6.3 Apr 2015</li> <li>4. South and West Devon Formulary and Referral <a href="http://www.southwest.devonformularyguidance.nhs.uk/">http://www.southwest.devonformularyguidance.nhs.uk/</a></li> <li>5. BNF current edition.</li> <li>6. Stockley's Drug Interactions 10<sup>th</sup> ed. (2013)</li> <li>7. British Journal of Haematology (BJH) Guideline: Guidelines on anticoagulation with warfarin: fourth edition 2010 <a href="http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2141.2011.08753.x/full">http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2141.2011.08753.x/full</a><br/><a href="http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2141.2011.08753.x/full">http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2141.2011.08753.x/full</a></li> <li>8. Local clinical guidelines on PHNT StaffNet Feb 2016): <ul style="list-style-type: none"> <li>• Adult oral anticoagulation guidelines, November 2011: <a href="http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Prescribing%20Regimens/Oral%20Anticoagulation%20Usage.pdf?timestamp=1454580236062">http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Prescribing%20Regimens/Oral%20Anticoagulation%20Usage.pdf?timestamp=1454580236062</a></li> <li>• LMWHs in secondary care, Nov 12 2011 <a href="http://staffnet.plymouth.nhs.uk/LinkClick.aspx?fileticket=nc6zpWApwQo%3d&amp;portalid=1&amp;timestamp=1454580113970">http://staffnet.plymouth.nhs.uk/LinkClick.aspx?fileticket=nc6zpWApwQo%3d&amp;portalid=1&amp;timestamp=1454580113970</a></li> <li>• Guidelines for the use of LMWHs in primary care, July 2012 <a href="http://staffnet.plymouth.nhs.uk/LinkClick.aspx?fileticket=02A8vqTzR4g%3d&amp;portalid=1&amp;timestamp=1454580048680">http://staffnet.plymouth.nhs.uk/LinkClick.aspx?fileticket=02A8vqTzR4g%3d&amp;portalid=1&amp;timestamp=1454580048680</a></li> <li>• Guideline for intravenous unfractionated heparin administration, August 2012 <a href="http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Prescribing%20Regimens/Intravenous%20Unfractionated%20Heparin%20Administration.pdf?timestamp=1454580361703">http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Prescribing%20Regimens/Intravenous%20Unfractionated%20Heparin%20Administration.pdf?timestamp=1454580361703</a></li> <li>• Heparin Induced Thrombocytopenia (HIT) Guidelines, July 2012</li> </ul> </li> </ol> |

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|                               | <p><a href="http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Haematology/Heparin-Induced%20Thrombocytopenia.pdf?timestamp=1454579947474">http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Haematology/Heparin-Induced%20Thrombocytopenia.pdf?timestamp=1454579947474</a></p> <ul style="list-style-type: none"> <li>• Dabigatran &amp; Rivaroxaban for the prevention of stroke and systemic embolism in AF, May 2012<br/><a href="http://staffnet.plymouth.nhs.uk/LinkClick.aspx?fileticket=OtiUZ1r_cjE%3d&amp;portalid=1&amp;timestamp=1454580570620">http://staffnet.plymouth.nhs.uk/LinkClick.aspx?fileticket=OtiUZ1r_cjE%3d&amp;portalid=1&amp;timestamp=1454580570620</a></li> <li>• Rivaroxaban for the treatment of DVTs and the prevention of recurrent DVTs and PEs, h 2013<br/><a href="http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Prescribing%20Regimens/Rivaroxaban%20for%20the%20treatment%20of%20DVTs%20and%20prevention%20of%20recurrent%20DVTs%20and%20PEs.pdf?timestamp=1454580419354">http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Clinical%20Guidelines/Prescribing%20Regimens/Rivaroxaban%20for%20the%20treatment%20of%20DVTs%20and%20prevention%20of%20recurrent%20DVTs%20and%20PEs.pdf?timestamp=1454580419354</a></li> </ul> |
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## Document Version Control

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| 1.2   | Review                                       | 12.5.12  | S. Cooke                   | No changes  |
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## Guidance

### 1. Introduction

The National Patient Safety Agency (NPSA) issued a Safer Practice Notice in March 2007 titled “Actions that can make anticoagulant therapy safer” ([www.npsa.nhs.uk/health/alerts](http://www.npsa.nhs.uk/health/alerts)). It provides guidance for all NHS staff involved in the prescribing, dispensing and administration of oral and parenteral anticoagulants. A joint working group was formed which included representatives from PHNT and PTPCT (now Livewell SW) and local actions agreed for each of the nine action points required by the NPSA alert.

This policy provides guidance for all staff involved in the prescribing, dispensing and administration of oral and parenteral anticoagulants to ensure compliance with the NPSA safety notice on all wards, units and community services (including the District Nursing Service) of Plymouth Community Healthcare (LSW).

### 2. Overall aim of the guidance

2.1 The aim of this policy is to provide robust and safe systems to manage the inherent risks to patients from the use of anticoagulant therapy. It meets or exceeds the minimum requirements of the NPSA safer practice notice no.18 with respect to risk assessment, safe procedures, clinical guidance, training and audit.

2.2 For the purposes of this policy “oral anticoagulation” is defined as therapy with Vitamin K Antagonists – Warfarin, Acenocoumarol or Phenindione. These require monitoring and dose adjustment guided by the measurement of INR. 2.3 Direct Oral Anticoagulants (DOACs) are covered in section 9. Sections of the document that do not specifically mention DOACs may or may not be applicable to these agents.

### 3. Objectives that build toward the overall aim of the guidance

The guidance covers the following key areas:

- Prescribing responsibilities for medical and non-medical prescribers: initiation, continuation, monitoring and discontinuation of anticoagulant therapy.
- Competency of all staff involved with anticoagulant prescribing, administration, supply and discontinuation.
- Safe systems for documenting results and treatment, including effective communication on discharge and the checking by prescribers, pharmacists and nurses that the INR is safe before issue or dispensing or administration of repeat prescriptions.
- Providing the patient with appropriate information at commencement, at discharge from inpatient services, in the community and throughout the course of treatment.

- Promotion of safe practice by re-checking the INR following changes of medication.
- Requirements for audit to ensure the guidance is achieving its objectives.

#### **4. Description of how you will measure its effectiveness**

**4.1 Every 2 years** the following parameters from the NPSA audit checklist (“Audit of safety indicators”) will be audited prospectively on Community & Rehabilitation wards over a period of one month using the information on the faxed discharge forms, LSW prescription charts and INR results from the iLab system:

**4.2 For all patients starting on oral anticoagulants**

- % patients developing INR > 5.0
- % patients following loading protocol
- % patients with therapeutic INR at discharge
- % patients not issued with patient-held written information pack (yellow book)
- % patients discharged without a date for next INR test
- % patients with unknown diagnosis, target INR or duration
- % patients with inappropriate target INR for diagnosis

**4.3 For patients established on oral anticoagulants before admission**

- % patients developing INR > 5.0 and those developing INR > 8.0
- % INR results > 1.0 below target range (e.g. INR < 1.5 if target 2.5)
- % INR results within target range
- % patients with unknown diagnosis, target INR or duration
- % patients with inappropriate target INR for diagnosis
- % patients without patient-held written information (yellow book)
- % patients discharged without a date for next INR test

**4.4 Every 12 months** there will also be a review of patient safety incident data (drawn from LSW electronic incident data) involving anticoagulants over the preceding 12 months. This data will be reviewed for common themes. Data will also include any reported incidents relating to bleeding associated with anticoagulants. If evidence emerges of incidents relating to anticoagulant prescribing in mental health units an audit will be organised in these units to gain a more complete picture.

**4.5** These audits will be reported back to the Medicines Governance Committee.

**4.6** Audit of safety indicators and clinical incidents will also take place in primary-care and learning points from both primary and secondary care shared via the joint anticoagulation working group. The working group, with representatives from primary and secondary care, will continue to meet when necessary to ensure

compliance with NPSA patient safety alert 18 and to discuss any issues across the interface.

## 5. Training and Competencies

### 5.1 Prescribers

All prescribers that initiate, continue or adjust dosage of anticoagulants must have the necessary work competencies to undertake their work safely.

The competencies are defined by the NPSA (<http://www.nrls.npsa.nhs.uk/resources/?entryid45=61790&q=0%ac2%acanticoagulant%ac2%ac>):

- Competency no. 1 “Initiating anticoagulant therapy”
- Competency no. 2 “Maintaining oral anticoagulant therapy”
- Competency no. 5 “Preparing and administering heparin therapy”

Practitioners should assess their current level of competence and improve their knowledge and understanding by completion of the following BMJ e-learning packages (same website as above):

- Starting patients on anticoagulants
- Maintaining patients on anticoagulants.

Anticoagulation is included in the following e-learning packages for F2 doctors on rotation:

- Doctor’s induction – information about the relevant sections of the drug chart, discharge forms and completion of Yellow Books. Also a strong recommendation to complete the BMJ learning packages and a link to the BMJ learning website.
- Any changes to policy or procedures relating to anticoagulants or any specific problems highlighted by audits or clinical incident reports will be included in the update training medicines management module for prescribers as applicable. Update training modules are reviewed annually.
- Completion of these packages is mandatory for Foundation Year Doctors. Others should complete the package appropriate to their role e.g. Mental Health prescribers may only need to do the BMJ maintenance pack as they do not initiate anticoagulants.
- Non-medical prescribers who may potentially prescribe anticoagulants should not do so until they have completed both packages.

### 5.2 Nursing Staff

Nursing staff who are authorised to administer medications under the LSW Safe & Secure handling of Medicines Policy may administer anticoagulants.



It is the responsibility of line managers to ensure that staff who administer or discharge patients on anticoagulants have sufficient knowledge to fulfil their responsibilities under this policy. The BMJ e-learning packages (see 5.1) can be used to improve knowledge of anticoagulation.

Nurses who are required to prepare or administer heparin therapy need to have appropriate knowledge of heparin as defined by the NPSA competency no.5 “Preparing and administering heparin therapy” (see section 5.1) and have completed the appropriate LSW IV administration training (see Medicines Management Policy).

### **5.3 Pharmacists and Pharmacy Technicians**

Pharmacists involved in clinically screening prescriptions for anticoagulants and counselling patients should also complete the e-learning packages referred to in 5.1 above.

All pharmacists will be asked to print off the certificates from the BMJ website to show that they have completed the e-learning packages and pharmacists new to LSW will be required to complete these as part of their departmental induction. Completion will be confirmed by line managers as part of the annual appraisal process.

### **5.4 Other Staff**

For LSW there are additional groups that require awareness of this policy only

- Community Nurses
- Community Nursing Assistants and Phlebotomists
- Mental Health Nurses
- Dentists see competency no. 3:  
<http://www.nrls.npsa.nhs.uk/EasySiteWeb/getresource.axd?AssetID=60024&type=full&servicetype=Attachment>

## **6. Oral Anticoagulation**

Clinical guidelines to aid prescribing are available on PHNT StaffNet (see references) and in the South and West Devon Formulary and Referral  
<http://www.southwest.devonformularyguidance.nhs.uk/>

### **6.1 Prescriber Responsibilities**

For inpatients, oral anticoagulants should be prescribed on the regular section of the LSW prescription chart with the dosage left blank and a note “see variable section”. This ensures that the anticoagulant doesn’t get overlooked during drug administration rounds. The variable section should then be completed as below.

All relevant parts of the variable dose section of the chart should be completed, including patient details (an addressograph sticker may be used), drug, indication, target INR and intended duration of therapy.

For each dose the date and INR result (if available) needs to be completed, as well as the dose, route and prescriber's signature. Doses must be prescribed in mg (not the number of tablets to be taken).

Blood for INR tests must be taken in the morning and the result checked and daily dose prescribed before 17.00 where ever possible. Dosing should not be left for the out-of-hours cover team to complete.

### **6.1.1 Initiation of Treatment**

Prescribers should carry out a risk assessment of the benefits versus the risks of therapy for individual patients before starting oral anticoagulation. This should include considerations made regarding choice of agent where DOACs may be an option. The risk assessment should be documented in the clinical record.

Baseline clotting screen should be performed before starting any anticoagulant and if starting a NOAC renal function and LFTs should also be assessed.

**If oral anticoagulation is to be commenced as an outpatient the patient's GP must be contacted and must agree that they are happy to commence therapy.** This should be for the minority of cases – most patients where a decision to start anticoagulation has been made while an inpatient should commence their therapy while in hospital.

For inpatients indicate that the anticoagulation is newly commenced and write the start date in the relevant place in the regular section of the chart.

The co-prescribing of anti-platelet agents with oral anticoagulants needs very careful safety evaluation as this will significantly increase the risk of bleeding. The indication for anti-platelet therapy and patient risk factors should be assessed for individual patients and decisions on whether anti-platelets are to stop or continue documented in the medical notes. Ensure anti-platelet therapy is crossed off the LSW prescription chart if it is to stop.

When a patient is commenced on an anticoagulant they must receive appropriate verbal information and be provided with a yellow oral anticoagulation pack entitled "Oral Anticoagulant Therapy – Important information for patients" (commonly referred to as a "Yellow Book").

The information in the Yellow Book should be fully explained to the patient (ward pharmacists will be checking the patient understands this information – see below). The record book should have all relevant sections at the front completed.

Where prescription charts are kept in a folder held centrally in the clinic room or office (such as on Mental Health units), yellow record books should be kept with the chart in its plastic wallet. If prescription charts are kept at the patient's bed, yellow record books should be kept in the discharge section of the patient's notes folder (to help prevent the book being mislaid).

Patients that are self-medicating on in patient units or at home should keep the booklet with their medicines but updating will be done by the appropriate member of staff as above.

Loading regimens are included in the clinical guidelines on PHNT StaffNet. **INR tests MUST be performed daily for at least the first four days of treatment.**

For patients being started on warfarin for stroke prevention in AF or where there are risk factors for bleeding the lower dose loading regimen should be used.

For the initial treatment of deep-vein thrombosis a low molecular weight heparin (enoxaparin) is started at treatment dose (1.5mg/kg) daily together with warfarin. **The LMWH needs to be continued usually for 5 days and until the INR is in range for at least 24 hours, then stop (see oral anticoagulant protocol for full details).**

### 6.1.2 Continuation of Prescribing

**Any significant change in clinical presentation in a patient on warfarin should trigger an immediate INR test and repeat INRs may be necessary whilst the patient remains unwell.** Where patients on DOACs have a significant change in clinical presentation bleeding should be considered and immediate haemoglobin checks carried out. A change in renal function can also result in accumulation of active drug and DOACs may need to be dose reduced or withheld until renal function recovers.

For existing patients, check that they already have a yellow book and provide a new one if required, ensuring all relevant sections at the front are completed. Sign in the relevant section on the front of the LSW prescription chart when this has been done.

Frequent changes in dose should be avoided, although prescribers should beware of other factors which may affect INR and monitor more frequently if necessary (see clinical guidelines).

Prescribers should simplify regimens for patients so that where possible:

- The least number of tablets need to be taken each day
- Constant daily dosing is employed rather than alternating doses

For patients with raised INR, refer to clinical guidelines - INR result, bleeding risk factors or presence of bleeding and risk to patient of reversing anticoagulant therapy should be considered and reversal agents given where indicated. **Any serious bleeding associated with anticoagulation must be reported using the electronic incident reporting system.**

**Phenindione and acenocoumarol** are rarely used and will only be commenced by a haematology consultant although patients visiting the area may be admitted on either of these agents. Prescribers may therefore be unfamiliar with their usage. Close monitoring of INR is recommended when restarting these agents or adjusting dosage. Acenocoumarol loading doses are usually 6mg then 4mg and maintenance doses between 1-8mg daily. Phenindione loading doses are usually 200mg then 100mg and maintenance doses between 50 – 150mg daily (see BNF latest edition or SPCs for full prescribing information).

### 6.1.2.1 Drug Interactions

As so many drugs have a potential, but unpredictable, interaction with oral anticoagulants, **ANY change in medication (addition or subtraction) should trigger a repeat INR within 2 - 4 days**, with dosage adjustment and further testing as necessary. See Oral Anticoagulation Guidelines for details.

The following drugs that induce Cytochrome P450 liver enzymes may be responsible for an interaction (increased clearance of anticoagulant) that **may take up to 2 or 3 weeks to take effect** [reference no.6]:

- Aprepitant
- Barbiturates (including Phenobarbital and Primidone)
- Carbamazepine
- Nevirapine, Efavirenz
- Phenytoin
- Rifampicin or Rifabutin
- St Johns Wort

If any of the above drugs are combined with an oral anticoagulant, INR tests should be performed at weekly intervals after any new prescription or change in dose until stabilised. If any of these drugs are reduced in dose or stopped, remember that the INR may rise and this may also take 2 - 3 weeks to become apparent.

Note that this additional precaution does not apply to drugs that inhibit Cytochrome P450 liver enzymes (see BNF), as these interactions are usually apparent within a few days.

### 6.1.2.2 Peri-operative Management

For elective patients, a decision must be made during the pre-assessment process regarding whether to stop oral anticoagulant and the patient/carer must be provided with written information about when to stop their treatment. Appropriate bridging therapy must be planned, including arrangements for administration if LMWH is prescribed.

For patients who require emergency surgery, consider reversal of anticoagulation, taking into account the risk of delayed surgery and bleeding risks.

Post-operatively all surgical patients should recommence anticoagulation as soon as bleeding risk and absorption of oral medication allows. Appropriate bridging should continue until oral anticoagulant has been reinstated and target INR reached.

### 6.1.3 Discharge

The aim should be for most patients to reach a stable INR within target range before discharge.

When a patient on oral anticoagulants (existing or new prescription) is discharged, the prescribing doctor MUST complete the “Oral Anticoagulation Discharge Information” form (LSW – see appendix 1).

This form should be faxed to the patient’s GP, remembering to include the ward fax number at the bottom of the form, so that the GP may acknowledge receipt. The completion and acknowledgement of this form has been added to the Discharge Checklist in use within the Community & Rehabilitation Directorate. Mental health wards also need to follow this procedure within their normal mode of operation.

Completing the discharge form may not remove the need to discuss the patient with the GP or to arrange for INR tests to be taken. Where INR is unstable or not in therapeutic range the GP should be contacted in addition to the form being completed. Use of the acute GP service may be considered for patients with sub-therapeutic INR to allow safe discharge (see clinical guidelines).

**Particular care should be taken when discharging a patient close to weekends or public holidays to ensure blood tests can be arranged at an appropriate interval after discharge.**

The patient’s Yellow Book MUST be updated with INR results and doses and the patient made aware of what dose to take and when their next INR test is due.

- For the sake of clarity, the Yellow Book should include the dose as the total in milligrams and not solely as a multiple of tablets e.g. “6 mg (2 x 3 mg tablets) daily”.
- 500 microgram warfarin tablets should be used to prevent the need to halve tablets. Take great care to avoid confusion between 500 microgram and 5 mg on the prescription (avoid the use of the description 0.5 mg).
- Patients will not normally be issued with both 5 mg and 500 microgram tablets.

## 6.2 Pharmacist Responsibilities

Yellow Books are supplied from Derriford Pharmacy and will be held as ward stock in all areas where they are commonly required. Ward stock supplies will be reordered or topped-up in the same way as stock drugs supplied from pharmacy.

The pharmacist clinically screening a prescription for anticoagulants should consider whether the dose, drug and route are appropriate for the patient. **Any problems, including significant drug interactions will be discussed with the prescriber and appropriate action taken.**

It is the pharmacist clinically checking the prescription for the patient (inpatients and patients being discharged) who is responsible for checking that the patient has a current Yellow Book. If the patient does not have an up-to-date book a new one should be supplied and filled out by the pharmacist.

### 6.2.1 Clinical Screening of Inpatient Prescriptions

The ward pharmacist should check the “Variable dose” page of the LSW prescription chart has been completed with patient details and information about the anticoagulant therapy. Missing details should be clarified and completed as necessary.

Pharmacists will ensure that the oral anticoagulant is written in the regular section of the LSW prescription chart (see 5.1).

For Community & Rehabilitation wards it is the ward pharmacist’s responsibility to ensure the information in the Yellow Book has been completed and to keep it up-to-date during the admission. For mental health wards with only occasional pharmacist cover the yellow book must be updated by the junior doctor.

The pharmacist should also check the patient’s understanding of the information in the Yellow Book (or PIL / patient card for DOACS) and give the patient (or carer if applicable) the opportunity to ask questions about their anticoagulant therapy wherever possible. There is a space on the front of the Community & Rehab LSW prescription chart to indicate when the patient has been counselled. For mental health there is no equivalent place on the chart so document in the clinical notes.

For Community & Rehabilitation wards pharmacists should monitor prescriptions for inpatients taking oral anticoagulants on each ward visit, where possible on a daily basis (Monday to Friday) and check whether INR results are available and the dose has been adjusted accordingly. For mental health wards with only occasional pharmacist cover the prescription and the yellow book must be updated by the junior doctor.

**Any concern about frequency of blood tests or dose should be discussed with the prescriber.**

### 6.2.2 Dispensing:

- Patients should be provided with minimum number of strengths of warfarin required for them to take their prescribed dose. This will normally be 1mg and 3mg tablets but could include 500microgram **or** 5mg tablets if necessary. Tablets of

500micrograms may be required to prevent patients having to halve tablets which some patient find difficult to do and which can lead to inaccuracies in dosage. When prescribing, dispensing or administering doses, great care should be taken to avoid mix ups between 500micrograms and 5mg tablets which should not normally be issued together for the same patient.

- Pharmacists should check that a recent, satisfactory INR test has been performed and recorded before dispensing or authorising a further supply of anticoagulant. If in any doubt, the pharmacist must contact the prescriber.
- Oral anticoagulants will not usually be dispensed into compliance aid systems.
- Dispensing labels should state “take as directed” and should not include a specific dose.

For Community & Rehabilitation wards discharge prescriptions the screening pharmacist **MUST** check that an “Oral Anticoagulant Discharge Form” has been completed by the prescriber **and check the information on this form is up-to-date, complete and consistent with the information available from other sources** (e.g. Yellow Book, LSW prescription chart). For mental health wards with only occasional pharmacist cover the “Oral Anticoagulation discharge Form” and the yellow book must be updated by the junior doctor.

## 6.3 Nursing Responsibilities

**6.3.1** Oral anticoagulants should be administered on the 5 p.m. or 6 p.m. drug administration round whilst the patient is an inpatient. If the dose is not prescribed by mid-afternoon the medical team should be contacted to prescribe the dose as soon as possible.

### **6.3.2 Administration of oral anticoagulants**

Before administering warfarin or any other oral anticoagulant to a patient, the nurse should check:

- The patient’s identity as per Safe & Secure Handling of Medicines Policy
- The dose to be given for that day has been completed by the doctor on the variable dose page of the LSW prescription chart
- The dose to be given for that day has not already been administered
- A recent INR test has been performed and the result is either within target or the doctor has adjusted the dose if the INR is outside of target – INR test should be performed more frequently if patient is acutely unwell and within 2 - 4 days of any change in other medication
- The nurse administering the dose should complete details of the dose given, the time given and their initials on the variable dose chart.
- **If the nurse is concerned about the dose or frequency of blood tests this should be discussed with the prescribing doctor.**

### **6.3.3 Discharge**

- If a pharmacist or doctor has not already done so, the nurse must ensure that the records in the yellow book are up-to-date and complete when the patient is discharged.

- The nurse issuing the discharge medication to the patient must check that the current dose and when this dose is due to be taken has been communicated to the patient or carer. The nurse should also confirm that the patient has understood the information in the yellow book or ensure relevant information is passed on to the patient's carers. The yellow book must be sent with the patient at discharge.

## 6.4 Community and Mental Health Nurse Responsibilities

### 6.4.1 District Nurses and staff working under their direction e.g. Community Nursing Assistants and Phlebotomists working with patients on oral anticoagulants in the community should:

- Before administering warfarin or any other oral anticoagulant to a patient, the nurse or assistant should check that:
  - The dose to be given for that day has been completed by the doctor on the COM65 form
  - The dose to be given for that day has not already been administered
  - Confirm dosage with patient and report any anomalies to the GP
  - A recent INR test has been performed **that is appropriate for the individual patient (this may be anything from a few days to eight weeks depending on the stability of the patient's INR). Check the result is either within target, or the doctor has adjusted the dose if the INR is outside of target**
  - A repeat INR has been performed within 2-4 days of any change in other medication (see section 6.1.2.1 for more details)
  - **Any significant change in clinical presentation in a patient on warfarin should trigger an immediate INR test and repeat INRs may be necessary whilst the patient remains unwell. Patients on DOACS whose clinical presentation changes significantly should have immediate blood gases / haemoglobin checks**
  -
- Encourage patients to enter dose changes and INR results in the yellow book and monitor this has been achieved
- Emphasise the importance of the patient information book and recording book to patients
- If performing near patient INR testing, nurses should be trained and feel competent to perform the test. CoaguChek® or similar machines should be regularly re-calibrated, as recommended by the manufacturer and suitable controls and quality assurance be implemented according to the PHNT guidelines on near patient testing for INR.

### 6.4.2 Mental Health Nurses who come into contact with patients prescribed oral anticoagulants should:



- Ensure patients have been provided with a Yellow Book. If not contact the patient's GP practice so that this can be provided.
- Emphasise the importance of the patient information book and recording book to patients
- Encourage patients to enter dose changes and INR results in the yellow book and monitor this has been achieved

## 7. Intravenous Unfractionated Heparin:

Therapeutic infusions of Heparin are not used in the wards, units or in the community services of LSW.

## 8. Low Molecular Weight Heparins

Prescribed doses of low molecular weight heparins (LMWHs) for the treatment of a thromboembolic event are dependent on the weight of the patient and renal function.

- A patient's weight **MUST** be used as the basis for calculating the required treatment dose of LMWH. The weight must be accurately recorded in kilograms (kg) on the front of the LSW prescription chart and in the medical notes.
- Patients should be weighed and their renal function checked at the start of therapy and, where applicable, during treatment. If this information is unavailable do not delay the first dose, but ensure these parameters are checked as soon as possible and the next dose adjusted accordingly.

Clinical guidelines are available on PHNT Staffnet which includes advice on dosage and monitoring. For the initial treatment of deep-vein thrombosis a low molecular weight heparin (enoxaparin) is started at treatment dose (1.5mg/kg) daily together with warfarin. **The LMWH needs to be continued usually for 5 days and until the INR is in range for at least 24 hours, then stop (see oral anticoagulant protocol for full details).**

Essential information such as dose, weight, renal function, indication and duration of treatment must be communicated at transfers of care.

Patients discharged on LMWH should be encouraged to self-administer if possible and can be taught how to do this by a nurse. If a District Nurse is required to administer the injection the ward nurse will make arrangements with the appropriate community team and the prescriber must complete a blue community prescription card.

All patients discharged on LMWH must be supplied with a yellow lid sharps bin.

## 9. Other Anticoagulants

A number of **novel oral anticoagulant** agents have been licensed for indications including prevention of VTE after orthopaedic surgery, stroke prevention in patients with AF and DVT treatment or prevention. These agents are direct thrombin inhibitors (e.g.

dabigatran) or inhibitors of factor Xa (e.g. rivaroxaban, apixaban). **INR monitoring is not required with these agents.**

**These drugs should only be used at licensed doses, for licensed indications and where NICE have made a positive recommendation for the use.**

When considering initiating an anticoagulant or choosing between agents a risk assessment should be carried out. Factors to consider include:

- Renal function,
- Risk factors for serious bleeding – there is no specific antidote to these agents in the event of haemorrhage,
- Interacting medications – e.g. dabigatran is contraindicated with certain medications and requires dose adjustment with others,
- Previous anticoagulant use and whether INR has been well controlled,
- An informed discussion of risks and benefits should take place with the patient before any anticoagulant therapy is initiated.

Guidelines regarding VTE prophylaxis following orthopaedic surgery, choice of agent for stroke prevention in AF and actions to take in the event of major bleeding or emergency surgery are available on PHNT StaffNet. Further clinical guidelines must be produced for other indications prior to local approval being given and made available on Healthnet.

Patients on DOACs must be provided with a manufacturer's patient information card or leaflet specific to the drug prescribed. These are available via Pharmacy at Mount Gould.

There is no specific antidote to the DOACs. Clinical guidelines regarding management of anticoagulation during the peri-operative period and actions to take in the event of major bleeding are available on PHNT StaffNet

Other anticoagulants may be used within LSW for specified indications or in particular circumstances. For example, fondaparinux is used for patients with acute coronary syndromes or danaparoid is available for when a patient has HIT diagnosed. Local clinical guidelines and product information should be consulted to ensure these anticoagulants are used safely.

Where a patient is prescribed one of these anticoagulants care must be taken that anticoagulant therapy is not unintentionally duplicated. Care should also be taken when switching a patient between anticoagulants and advice sought from haematology or pharmacy if appropriate.

## **10. Dental Services**

Please refer to appendix 2 (Managing Dental Patients).

**Approval by Medicines Governance Group (MGG)**

**Chief Pharmacist (Chair of MGG)**

Name: Steve Cooke

Signature:...

Date: 28/04/16

**Final Approval by Plymouth Community Healthcare**

**Medical Director**

Name: Dr. Adam Morris

Signature...

Date: 05.05.2016

## Appendix 1

**Note: This form has been formatted to be consistent with the rest of the document, covering two pages. The actual form to be used is on one page and will be printed separately.**



### Oral Anticoagulant Discharge Information

#### Livewell South West Wards / Units

- This form must be completed by the doctor discharging a patient who is receiving an oral anticoagulant whilst an in-patient in wards/units of LSW
- Please print all information and complete all sections.
- Please fax to the GP surgery and remember to include the ward fax number at the bottom of the form\* so that the GP may acknowledge receipt.
- PLEASE INDICATE IF THE ANTICOAGULANT USED IS NOT WARFARIN

|                    |  |
|--------------------|--|
| NHS No:            |  |
| Date of birth:     |  |
| Consultant:        |  |
| Ward:              |  |
| Date of admission: |  |

|                           |  |
|---------------------------|--|
| Name:                     |  |
| Address:                  |  |
| Postcode:                 |  |
| (Please use sticky label) |  |

|            |  |
|------------|--|
| GP's Name: |  |
| Address    |  |
| Fax No:    |  |
| Tel No.    |  |

|   |  |
|---|--|
| Temporary address if patient is not discharged home |  |
|   |  |
| Tel No:   |  |

**INDICATION:**

**NAME OF ANTICOAGULANT:  
(If not warfarin)**

|                              |  |  |
|------------------------------|--|--|
| <b>ANTICOAGULANT THERAPY</b> |  | <b>Yellow Book given to Patient<br/>Yes / No</b> |
| INITIATED                    |  |  |
| STOPPED & RE-STARTED         |  |  |
| CONTINUED                    |  |  |

| INDICATION                         | INR TARGET | √ |
|------------------------------------|------------|---|
| Arterial Disease                   | 2.5        |   |
| Arterial Grafts                    | 2.5        |   |
| Atrial Fibrillation                | 2.5        |   |
| DVT/PE                             | 2.5        |   |
| DVT/PE recurrent off anticoagulant | 2.5        |   |
| DVT/PE recurrent on anticoagulant  | 3.5        |   |
| Hypercoaguability states           | 2.5        |   |
| Prosthetic Valve Mitral            | 3.5 or 3.0 |   |
| Prosthetic Valve Aortic            | 2.5 or 3.0 |   |
| Biprosthetic Valve                 | 2.5        |   |
| Other .....                        |            |   |

| COMPLICATING FACTORS (tick all that apply) | √ |
|--|---|
| Recent Peptic Ulcer                        |   |
| Recent Trauma or Surgery to the CNS or eye |   |
| Right Heart Failure                        |   |
| Stroke                                     |   |
| Uncontrolled Hypertension                  |   |
| Alcoholism                                 |   |
| Uncompensated Cirrhosis of the Liver       |   |
| Pre-existing Haemostatic Defect            |   |
| Elderly Patient                            |   |
| Uncooperative Patient                      |   |
| Other                                      |   |

British Journal of Haematology 2006;

132:277-285 [www.bcsqguidelines.com](http://www.bcsqguidelines.com)

Interacting drugs (with dates started / stopped) during admission or on discharge:

.....  
 .....

Anticoagulant: date started: ..... Current dose: ..... Last INR: ..... Date:

.....

Next INR due: ..... OR Next INR arranged for: .....

Dr's Name: ..... Designation..... Bleep No: .....

Dr's signature.....Date of discharge.....

**Surgery Acknowledgement:** Sign: .....Print name:

.....

\*Fax back to ..... (Ward fax number) Date and time:

.....

## Appendix 2 Managing patients who are taking warfarin and undergoing dental treatment

### Managing patients who are taking warfarin and undergoing dental treatment

#### General guidelines

- If patients on warfarin who require dental surgery have an International Normalised Ratio (INR) of below 4.0, they can usually receive their dental treatment in primary care without needing to stop their warfarin or adjust their dose.
- The risk of thromboembolism after temporary withdrawal of warfarin therapy outweighs the risk of oral bleeding following dental surgery.
- Patients on warfarin may bleed more than normal, but bleeding is usually controlled with local measures.

#### Advice to be given to patients

Advice for patients is available in the patient leaflet, *Oral Anticoagulant Therapy: Important information for dental patients*.

#### Drug interactions

##### Amoxicillin

There have been anecdotal reports that amoxicillin interacts with warfarin causing increased prothrombin time and/or bleeding, but documented cases are relatively rare. However, a single three gram dose for endocarditis prophylaxis has NOT been shown to produce a clinically relevant interaction. Patients requiring a course of amoxicillin should be advised to be vigilant for any signs of increased bleeding.

##### Clindamycin

Clindamycin does not interact with warfarin when given as a single dose for endocarditis prophylaxis. Clindamycin is restricted to specialist use for treatment and should not be used routinely for dental infections due to its serious side effects. There is a single case report of an interaction between warfarin and clindamycin.

**Erythromycin and other macrolide antibiotics (for example, azithromycin)**  
Macrolide antibiotics interact with warfarin unpredictably and only in certain individuals. Patients should be advised to be vigilant for any signs of increased bleeding.

If increased bleeding occurs then the patient should be advised to contact the GP or anticoagulant clinic to arrange additional INR testing and dose review.

##### Metronidazole

Metronidazole interacts with warfarin and should be avoided if possible. If it cannot be avoided, the warfarin dose may need to be reduced by a third to a half, and re-adjusted again when the antibiotic is discontinued. Contact the GP or anticoagulant clinic to arrange additional INR testing and dose review.

##### Non-steroidal anti-inflammatory drugs

Drugs including ibuprofen, aspirin and diclofenac should not be used as analgesics in patients taking warfarin.

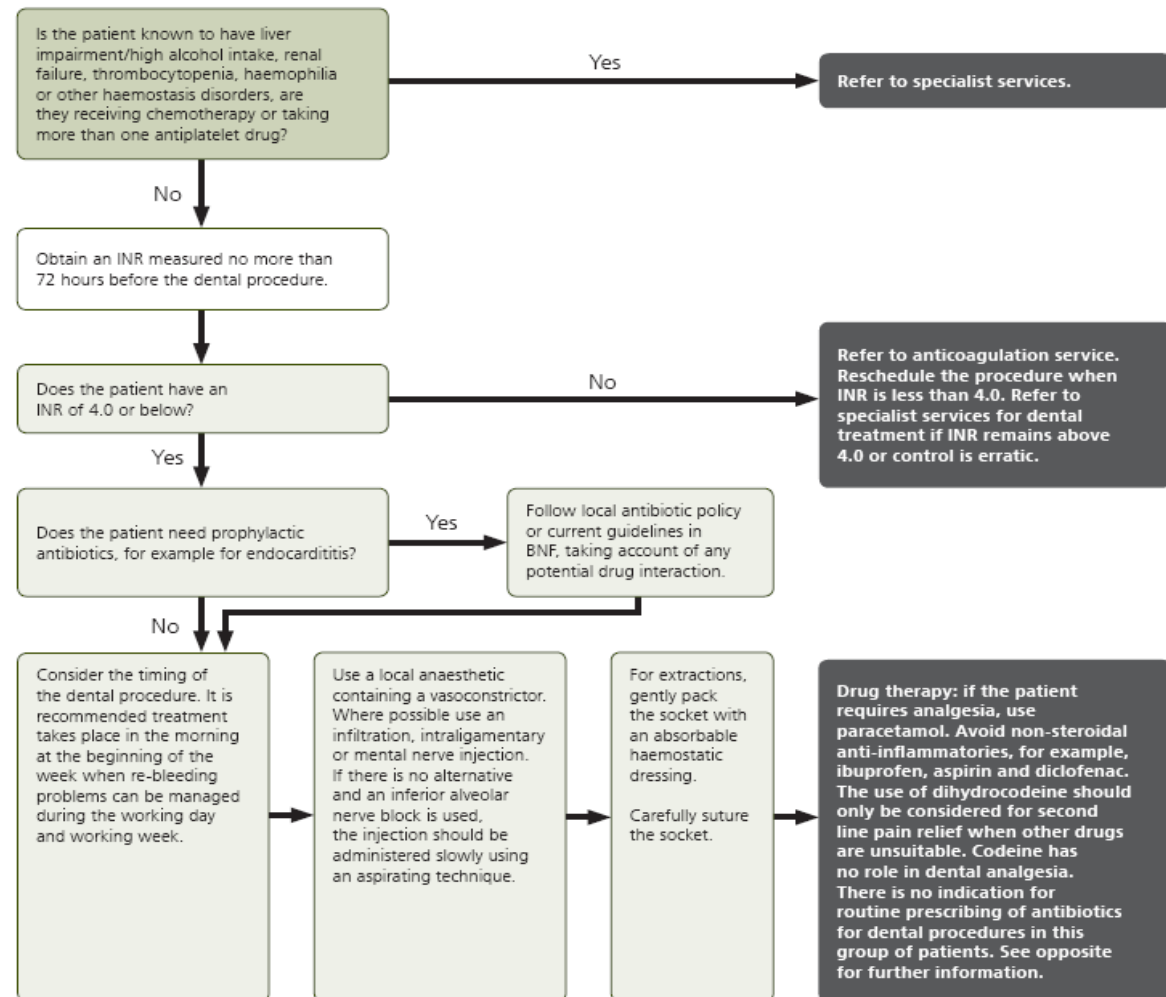
##### Dental surgery covered by this advice includes:

Treatment where the INR does not need to be checked:

- Prosthodontics
- Conservation
- Endodontics

Treatment where the INR does need to be checked (follow flow diagram):

- Extractions
- Minor oral surgery
- Periodontal surgery
- Biopsies



All patient safety incidents should be reported to the PCT using local reporting procedures, or directly to the NPSA using the e-form on the NPSA website at [www.npsa.nhs.uk](http://www.npsa.nhs.uk). This document was produced with the support of the British Dental Association and advice from the Haemostasis and Thrombosis Task Force of the British Committee for Standards in Haematology (BCSH) – See [www.bcsghguidelines.com](http://www.bcsghguidelines.com). The information is based on guidance from UK Medicines information. Surgical management of the primary care dental patient on warfarin. North West Medicines Information Centre. March 2004.