

## National Enhanced Service for Anti-Coagulation Monitoring

Reference: NES01

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### 1. Financial Details

This agreement is to cover the 12 months commencing 1<sup>st</sup> April 2009.

On agreement with the PCT for the 12 months commencing 1<sup>st</sup> April 2009 practices will receive £8.71 for laboratory outreach sampling, test and dose paid at mid-point per patient per quarter monitored through this service.

### 2. Service Aims

An anti-coagulation monitoring service is designed to be one in which:

- (i) therapy should normally be initiated in secondary care, for recognized indications for specified lengths of time
- (ii) maintenance of patients should be properly controlled
- (iii) the service to the patient is convenient
- (iv) the need for continuation of therapy is reviewed regularly
- (v) the therapy is discontinued when appropriate

### 3. Criteria

The National Enhanced Service Specification details the following criteria:

The following pages contain some further guidance from the PCT on expected processes, outcomes and deliverables based on this process. On aspiring to this service practices are required to submit plans under each of these items to the PCT.

- (i) Direct Service Delivery
- (ii) Data Collection
- (iii) Staffing
- (iv) Liaison/Shared Care
- (v) Review/Audit

### **Criteria One : Direct Service Delivery**

When appropriate to refer patients promptly to other necessary services and to the relevant support agencies using locally agreed guidelines where these exist.

To ensure that all newly diagnosed patients (and/or their carers and support staff when appropriate) receive appropriate management of, and prevention of, secondary complications of their condition including the provision of patient-held booklet

To prepare with the patient an individual management plan, which gives the diagnosis, planned duration and therapeutic range to be obtained

To ensure that at initial diagnosis and at least annually an appropriate review of the patient's health is carried out including checks for potential complications and, as necessary, a review of the patient's own monitoring records. To ensure that all clinical information related to the NES is recorded in the patient's own GP held lifelong record, including the completion of the "significant event" record that the patient is on warfarin.

### **Criteria Two: Data Collection**

To ensure that systematic call and recall of patients on this register is taking place either in a hospital or general practice setting

The development and maintenance of a register. Practices should be able to produce an up-to-date register of all anti-coagulation monitoring service patients, indicating patient name, date of birth, the indication for, and length of, treatment including the target INR.

To maintain adequate records of the performance and result of the service provided, incorporating appropriate known information, as appropriate. This may include the number of bleeding episodes requiring hospital admission and deaths caused by anti-coagulants.

### **Criteria Three: Staffing**

Each practice must ensure that all staff involved in providing any aspect of care under this scheme have the necessary training and skills to do so

#### **Criteria Four : Liaison/Shared Care**

To work together with other professionals when appropriate. Any health professionals involved in the care of patients in the programme should be appropriately trained

#### **Criteria Five: Review/Audit**

To carry out clinical audit of the care of patients against the above criteria, including untoward incidents. This should also review the success of the practice in maintaining its patients within the designated INR range as part of quality assurance

All practices involved in this scheme should perform an annual review which could include:

- (a) information on the number of patients being monitored, the indications of anticoagulation, ie DVT etc, and the duration of treatment
- (b) brief details as to arrangements for each of the aspects highlighted above
- (c) details of any computer-assisted decision-making equipment used and arrangements for internal and external quality assurance
- (d) details of any near-patient testing equipment used and arrangements for internal and external quality assurance
- (e) details of training and education relevant to the anti-coagulation monitoring service received by practitioners and staff
- (f) details of the standards used for the control of anti-coagulation

#### **4. Untoward events**

It is a condition of participation in this NES that practitioners will give notification to the PCO clinical governance lead of all emergency admissions or deaths of any patient covered under this service, where such admission or death is or may be due to usage of the drug(s) in question or attributable to the relevant underlying medical condition. This must be reported within 72 hours of the information becoming known to the practitioner. This is in addition to a practitioner's statutory obligations.

#### **5. Accreditation**

Those doctors who had previously provided services similar to this enhanced service and who satisfy at appraisal and revalidation that they have such continuing medical experience, training and competence as is necessary to enable them to contract for the enhanced service shall be deemed professionally qualified to do so.

#### **6. Ongoing Measurement & Evaluation**

The ongoing measurement is outlined in the various criteria in the previous section.

In addition the practice is required to agree with the PCT this service specification/plan at the start of the year and to submit the completed document at the end of the year for evaluation purposes.

# Annex

## Warfarin prescribing guidelines

### General guidance

1. This protocol sets out details for the care of patients taking warfarin. The patient should also have received advice and written information on anticoagulant therapy, normally in the form of an anticoagulant booklet.

### Background

2. Warfarin use is increasing as new indications for its efficacy have been recently identified. Nevertheless, its use is associated with adverse effects, particularly bleeding, and optimum management can be achieved by shared care between hospital and general practitioner. The present indications for warfarin, together with the presently agreed degree of anticoagulation for that indication are shown in the attached Tables 1 and 2.

### Table 1

#### Therapeutic recommended uses and International Normalised Ratios (INRs) for those uses (British Society of Haematology)

Prophylaxis of postoperative deep vein thrombosis (general surgery)	2.0-2.5
Prophylaxis of postoperative deep vein thrombosis in hip surgery and fractures	2.0-3.0
Myocardial infarction: prevention of venous thromboembolism	2.0-3.0
Treatment of venous thrombosis (DVT)	2.0-3.0
Treatment of pulmonary embolism (PE)	2.0-3.0
Transient ischaemic attacks	2.0-3.0
Tissue heart valves	2.0-3.0
Atrial fibrillation	2.0-3.0
Valvular heart disease	2.0-3.0
Recurrent deep vein thrombosis and pulmonary embolism	3.0-4.5
Arterial disease including myocardial infarction	3.0-4.5
Mechanical prosthetic valves (see table 2)	
Recurrent systemic embolism	3.0-4.5
Intravascular stent	2.5-3.5

**Table 2**

<b>Recommended INR for prosthetic valves</b>	<b>Sinus rhythm normal left atrial size (i.e. most aortic valve replacement patients)</b>	<b>Atrial fibrillation enlarged left atrium (i.e. most mitral valve replacement patients)</b>
Low thrombogenicity prosthesis	2.0 - 3.0	2.5 - 3.5
Other Prostheses	3.5 - 4.5	3.5 - 4.5

**Dosage regimens**

3. The average dose of warfarin required daily is around 5 mg (range 1-9 mg) but may vary markedly because of several factors. Warfarin should be given once daily (5-6 pm is an ideal time) and is given as a tablet for oral administration. [Tablet strengths are 1 mg (brown), 3 mg (blue), 5 mg (pink).]

**Duration of therapy**

4. After a single episode of venous thromboembolism, it is likely that three months' therapy is necessary. The duration of therapy needed after a second episode of DVT or PE is uncertain but 6-12 months' therapy is normally advocated. Patients with repeated episodes or in whom risk factors persist may require long-term (even life-long) therapy. In other indications long-term therapy may be necessary.
5. For patients in whom no new factor has arisen, the frequency of monitoring can be determined by the criteria shown in Table 3.

**Table 3**

<b>Warfarin therapy: maximum recall periods during maintenance therapy*</b>	
*(not initiation)	
One INR high:	recall in 7-14 days (stop treatment for 1-3 days) (maximum 1 week in prosthetic valve patients)
One INR low:	recall in 7-14 days
One INR therapeutic:	recall in 4 weeks
Two INRs therapeutic:	recall in 6 weeks (maximum for prosthetic valve patients)
Three INRs therapeutic:	recall in 8 weeks, apart from prosthetic valve patients
Four INRs therapeutic:	recall in 10 weeks, apart from prosthetic valve patients
Five INRs therapeutic:	recall in 12 weeks, apart from prosthetic valve patients
NB Patients seen after discharge from hospital with prosthetic valves may need more frequent INRs in the first few weeks.	
(Based on data from Ryan et al (1989) British Medical Journal 299, 1207-1209)	

6. When a condition known to cause alteration in the dose requirement of warfarin occurs (eg a potentially interacting drug), or the patient has an acute intercurrent illness, frequency of monitoring should be increased.
7. The following conditions cause warfarin sensitivity (ie need for reduced dose):
  - (i) liver dysfunction
  - (ii) heart failure
  - (iii) hyperthyroidism
  - (iv) some drugs
  - (v) acute pyrexial episode.
8. Some conditions cause warfarin requirements to be increased (ie need for greater than normal dose):
  - (i) hypothyroidism
  - (ii) vitamin K containing remedies, eg some herbal remedies and enteral feeds
  - (iii) some drugs.