All Wales Medicines Strategy Group

Grŵp Strategaeth Meddyginiaethau Cymru Gyfan

# All Wales Advice on the Role of Oral Anticoagulants

September 2014

This report has been prepared by a multidisciplinary anticoagulation subgroup, with support from the All Wales Prescribing Advisory Group (AWPAG) and the All Wales Therapeutics and Toxicology Centre (AWTTC)], and has subsequently been endorsed by the All Wales Medicines Strategy Group (AWMSG).

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## 1.0 INTRODUCTION

### 1.1 AWMSG guidance
AWMSG therapeutic guidance is suitable for local adaptation within NHS Wales.

### 1.2 Background
The guidance document 'Advice on the Role of Oral Anticoagulants for the Prevention of Stroke and Systemic Embolism in People with Atrial Fibrillation' was endorsed by AWMSG in October 2012. The evidence, range of therapeutic agents and licensed indications of the newer oral anticoagulants have changed since this publication. The National Institute for Health and Care Excellence (NICE) Clinical Guideline (CG) 180: *Atrial fibrillation: the management of atrial fibrillation* was published in June 2014 and has been taken into consideration.

A multidisciplinary anticoagulation subgroup with membership from across Wales reviewed and updated recommendations for consideration by AWPAG and AWMSG.

The document covers the safe and effective use of: oral anticoagulants for the prevention of stroke and systemic embolism in people with non-valvular atrial fibrillation (AF) (Table 1), and warfarin for all indications (Table 2).

### 1.3 Terminology
Vitamin K antagonists (VKAs) include acenocoumarol, phenindione and warfarin. Warfarin accounts for 99.84% of VKA items prescribed in primary care in Wales. This paper uses the term 'warfarin' to improve readability. However, source guidance using the term VKA has been retained.

### 1.4 Key sources
AWMSG guidance, NICE and NICE-accredited sources were used, including:

- AWMSG Advice on the Role of Oral Anticoagulants for the Prevention of Stroke and Systemic Embolism in People with Atrial Fibrillation
- Welsh Medicines Resource Centre Bulletin: Newer oral anticoagulants
- Scottish Intercollegiate Guidelines Network (SIGN) Prevention of stroke in patients with atrial fibrillation: a guide for primary care
- NICE CG180: Atrial Fibrillation
- SIGN 129. Antithrombotics: indications and management

#### 1.4.1 Key policy documents, reports and national audits
- NHS Wales Delivery Framework 2013–2014

#### 1.4.2 Related national guidance
- NICE CG144: Venous thromboembolic diseases
- 1000 Lives Plus – Reduction in INR > 5 and INR > 8 in hospital and community settings

### 1.5 Existing indicators

- GMS Contract Quality and Outcomes Framework (QOF) 2014–2015
- GMS Contract QOF Wales 2014–2015

| AF Indicator (Wales) | Points | Achievement thresholds |
|---|---|---|
| **Records** | | |
| AF001. The contractor establishes and maintains a register of patients with AF | 2 | |
| **Ongoing management** | | |
| AF002. The percentage of patients with AF in whom stroke risk has been assessed using the $CHADS_2$ risk stratification scoring system in the preceding 3 years (excluding those whose previous $CHADS_2$ score is greater than 1) | 5 | 50–90% |
| AF004. In those patients with AF whose latest record of a $CHADS_2$ score is greater than 1, the percentage of patients who are currently treated with anti-coagulation therapy | 6 | 40–70% |
| AF005W. In those patients with AF in whom there is a record of a CHADS2 score of 1, in the preceding 3 years, the percentage of patients who are currently treated with anti-coagulation drug therapy or anti-platelet therapy | 3 | 54–94% |

***QOF amendment August 2014 (Wales)***

*GP contractors are to be awarded full points for 2014/15 for AF002; AF004; and AF005W to support the change of a risk assessment tool for new patients, to begin to update risk assessment for patients already on the register and to review all patients on aspirin monotherapy (14 points). GP contractors must confirm that all patients on aspirin monotherapy have been reviewed by 31 March 2015. The linked $CHA_2DS_2$-VASc risk assessment tool should now be adopted.*

## 2.0 RECOMMENDATIONS

**Table 1. Recommendations on the Role of Oral Anticoagulants for the Prevention of Stroke and Systemic Embolism in People with Non-valvular AF**

| | |
|---|---|
| **1.0** | **IDENTIFICATION** |
| **1.1** | Perform manual pulse palpation to assess for the presence of an irregular pulse that may indicate underlying AF in people presenting with any of the following:<br>• breathlessness/dyspnoea<br>• palpitations<br>• syncope/dizziness<br>• chest discomfort<br>• stroke/transient ischaemic attack (NICE 2014)[1]. |
| **1.2** | Perform an electrocardiogram (ECG) in all people, whether symptomatic or not, in whom AF is suspected because an irregular pulse has been detected (NICE 2014)[1]. |
| **2.0** | **INITIAL ASSESSMENT** |
| **2.1** | People with AF should have a documented:<br>• stroke and bleeding risk assessment (including pre-treatment blood tests: full blood count [FBC], urea and electrolytes, liver function tests, coagulation screen and INR);<br>• discussion with the clinician about the risks and benefits of treatment, using accredited decision aids where possible[2] (e.g. NICE Patient Decision Aid). |
| **2.2** | When a person is initiated on oral anticoagulants in one care setting, the documented baseline assessment should be transferred with the prescribing responsibility. |
| **2.3** | The focus of AF management should be to identify affected people and undertake stroke risk assessment using the $CHA_2DS_2$-VASc risk assessment tool. Assess bleeding risk using an appropriate tool, such as HAS-BLED or the AWMSG Risk/Benefit Assessment Tool for Oral Anticoagulant Treatment in People with AF, and address modifiable risk factors. |
| **2.4** | Offer anticoagulation to people with a $CHA_2DS_2$-VASc score of 2 or above, taking bleeding risk into account (NICE 2014 Key Priority for Implementation [KPI])[1].<br>Consider anticoagulation for men with a $CHA_2DS_2$-VASc score of 1. Take the bleeding risk into account (NICE 2014)[1] |
| **3.0** | **CHOICE OF AGENT** |
| **3.1** | Do not offer aspirin monotherapy solely for stroke prevention to people with AF (NICE 2014 KPI)[1]. |
| **3.2** | NICE CG180 states:<br>*'Anticoagulation may be with apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist… Discuss the options for anticoagulation with the person and base the choice on their clinical features and preferences'* (NICE 2014)[1].<br>AWMSG recommendation:<br>Use of warfarin first line for most people will support the managed entry* of the newer agents. For some individuals, it may be necessary to consider an alternative agent after an informed discussion between the clinician and the person, and depending on local service models.<br>This recommendation (*September 2014*) will be reviewed in 12 months (*September 2015*).<br>**Managed entry refers to the use of medicines in a clearly identified target patient population by the most appropriate group of prescribers in terms of their ability to make informed prescribing decisions. It enables specialist prescribers initially to gain experience with new medicines and promote the safe introduction of medicines. Following a predefined period, the drug should be reassessed using the information gathered during the monitoring process. Future use of the drug should then be reappraised.* |
| **3.3** | The decision about whether to start treatment with dabigatran etexilate/rivaroxaban▼ or apixaban▼ should be made after an informed discussion between the clinician and the person about the risks and benefits compared with warfarin[3–5].<br>Consider using a patient decision aid (e.g. NICE Patient Decision Aid).<br>In selecting a novel antithrombotic, consideration should be given to:<br>• the relative lack of experience of long term use compared with a VKA or aspirin<br>• the lack of a licensed product for rapid reversal of the anticoagulant effect<br>• the limited data on use in patients at the extremes of body weight and those with hepatic impairment (SIGN 129)[6]. |
| **3.4** | The prescriber should make efforts to understand and address the reasons for non-adherence before switching to an alternative medicine[2].<br>People in whom adherence to medicines is known to be an issue may not be suitable for dabigatran etexilate/rivaroxaban or apixaban.<br>Poor adherence to any oral anticoagulant regimen is likely to be associated with increased risk of thrombosis or bleeding (AWMSG 2012, updated)[2]. |

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| **3.5** | If poor anticoagulation control (see Recommendation 4.4) cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person (NICE 2014)[1]. |
| **3.6** | Ensure that people prescribed anticoagulants receive appropriate verbal and written information when necessary throughout the course of their treatment[7].<br>People initiated on warfarin should be issued the information (yellow) booklet.<br>People initiated on dabigatran etexilate, rivaroxaban or apixaban should be provided with written information and monitoring booklet, e.g. the European Heart Rhythm Association (EHRA) Atrial Fibrillation Oral Anticoagulation Card. |
| **3.7** | In patients with AF the combination of aspirin and warfarin is not recommended[6].<br>If warfarin is indicated for moderate- or high-risk AF it should be used alone even in the presence of concomitant stable cardiovascular disease[6]. |
| **3.8** | Combination therapy of warfarin and antiplatelet may be advised by cardiologists, normally for a limited period, for patients who have coronary artery stents or cardiology intervention in the previous year. Clarification should be sought from the patient's interventional cardiologist if there is any doubt[8]. |
| **4.0** | **REVIEW** |
| **4.1** | For people who are taking an anticoagulant, review the need for anticoagulation and the quality of anticoagulation at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk (NICE 2014)[1] (see AWMSG Risk/Benefit Assessment Tool [2-page version]). |
| **4.2** | Where warfarin is prescribed, time in therapeutic range (TTR) for each patient should be assessed at least annually[9]. |
| **4.3** | Undertake FBC, renal and liver function tests at least annually[10,11] for people taking any anticoagulant. More frequent monitoring is advised if baseline tests are abnormal or there is intercurrent illness that may impact renal or hepatic function. |
| **4.4** | Reassess (see 4.5) anticoagulation for a person with poor anticoagulation control shown by any of the following:<br>• Two INR values higher than 5 or one INR value higher than 8 within the past 6 months<br>• Two INR values less than 1.5 within the past 6 months<br>• TTR less than 65% (NICE 2014)[1]. |
| **4.5** | When reassessing anticoagulation, take into account and if possible address the following factors that may contribute to poor anticoagulation control, using national or locally agreed tools. These should include:<br>• cognitive function<br>• adherence to prescribed therapy<br>• new diagnoses e.g. cancer<br>• interacting drug therapy e.g. over the counter therapies, frequent antibiotics<br>• lifestyle factors including diet and alcohol consumption[1]<br><br>Do not withhold anticoagulation solely because the person is at risk of having a fall (NICE 2014)[1].<br>Useful tool: AWMSG Risk/Benefit Assessment Tool (2-page version). |
| **4.6** | For people [with AF] who are not taking an anticoagulant, review stroke risk when they reach age 65 or if they develop any of the following at any age:<br>• diabetes<br>• heart failure<br>• peripheral arterial disease<br>• coronary heart disease<br>• stroke, transient ischaemic attack or systemic thromboembolism (NICE 2014)[1]. |
| **4.7** | For people [with AF] who are not taking an anticoagulant because of bleeding risk or other factors, review stroke and bleeding risks annually, and ensure that all reviews and decisions are documented (NICE 2014)[1]. |
| **5.0** | **PRESCRIBING RESPONSIBILITY** |
| **5.1** | People with a new diagnosis of non-valvular AF should normally have the initial assessment and discussion regarding anticoagulation in the setting (hospital, GP practice) in which the diagnosis was made. |
| **5.2** | When a decision to initiate anticoagulation has been made, prompt initiation and stabilisation* should normally be undertaken in the setting in which the decision was made.<br>If a primary care team does not have appropriate expertise to initiate warfarin (for example, general practices providing level 1 and 2 anticoagulation service) a baseline assessment should be sent to the oral anticoagulant clinic. The clinic will provide patient education and counselling but will not advise on the decision to initiate treatment.<br><br>**Stabilisation: Two INR readings in range with confirmation that INR/dosing interval at least 7 days.* |

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| **5.3** | When a person is identified as having poor anticoagulation control, the re-assessment of anticoagulation should be undertaken through discussion with the patient, by the healthcare professional providing dosing.<br>Anticoagulant clinics may need to liaise with the general practice following a re-assessment of poor anticoagulant control to identify further possible causes. |
| **5.4** | The decision to start therapy with dabigatran etexilate, rivaroxaban or apixaban for non-valvular AF should be carried out by clinicians with an interest in stroke prevention and management of AF.<br>It may be appropriate for GP practices that provide level 3 and 4 anticoagulation services to make the decision to start dabigatran etexilate, rivaroxaban or apixaban depending on health board service models (AWMSG 2012 updated). |
| **5.5** | The cause of an INR > 8 should be investigated. This should normally be undertaken by the team requesting the INR. |
| **6.0** | **MONITORING OF INR CONTROL (WARFARIN ONLY)** |
| **6.1** | When calculating TTR:<br>• Use a validated method of measurement such as the Rosendaal method for computer-assisted dosing, or proportion of tests in range for manual dosing.<br>• Exclude measurements taken during the first 6 weeks of treatment.<br>• Calculate TTR over a maintenance period of at least 6 months (NICE 2014)[1]. |
| **6.2** | Warfarin dosing:<br>• Providers should normally use computer dosing software systems (AWMSG Warfarin monitoring).<br>• Computer dosing should be interpreted and actioned by non-administrative professionals, who are trained, accredited and competent to manage warfarin therapy.<br>• Avoid over-reliance on computer-generated dosing and use clinical expertise to interpret dosing advice (new). |
| **6.3** | Self-monitoring of coagulation status in people on long-term VKA therapy should be in accordance with NICE diagnostics point-of-care coagulometers document.<br>The consultation draft states:<br>The CoaguChek XS system is recommended for self-monitoring coagulation status in adults and children on long-term VKA therapy who have AF or heart valve disease if: the person prefers this form of testing, **and** the person or their carer is both physically and cognitively able to self-monitor effectively. |
| **7.0** | **REPORTING** |
| **7.1** | Rivaroxaban and apixaban are currently under "Additional Monitoring" by the European Medicines Agency (EMA) and all suspected adverse drug reactions (ADRs) should be reported, as well as all serious ADRs (see www.yellowcard.gov.uk for definition of serious) to dabigatran etexilate and warfarin. ADRs should be reported directly to the Medicines and Healthcare Products Regulatory Agency (MHRA) through the Yellow Card Scheme using the electronic form at www.yellowcard.gov.uk or cards available at the back of the British National Formulary (BNF) (AWMSG 2012 updated). |

**Table 2. Recommendations on the Role of Warfarin for All Indications**
(See also AWMSG Warfarin Monitoring)

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| **8.0** | **MANAGEMENT OF SUPRATHERAPEUTIC INRs** |
| **8.1** | People with mechanical valves with INR over 8 should be managed according to specialist advice. |
| **8.2** | It is appropriate to administer oral phytomenadione (vitamin K1) in general practice as well as in the hospital setting for people with INR > 8, with no bleeding where the perceived risk of bleeding is high, who are being treated for AF, recurrent deep vein thrombosis (DVT) or pulmonary embolism (PE).<br>Exceptions: 8.1. |
| **8.3** | Give phytomenadione (vitamin K1) 1–5 mg by mouth using the intravenous preparation orally (unlicensed use); repeat dose of phytomenadione if INR still too high after 24 hours; restart warfarin when INR < 5[12].<br>Expert opinion suggests that 1 mg is an adequate dose.<br><br>*Access to vitamin K – Practices, community pharmacists and Out Of Hours providers may wish to stock phytomenadione or agree local arrangements to ensure prompt access to therapy.* |
| **9.0** | **USE OF LMWH FOR SUBTHERAPEUTIC INR** |
| **9.1** | Selected patients on warfarin who are at high risk of thromboembolism (for example, patients with mechanical valves or recurrent DVT/PE and those identified by the haematologist or cardiac surgeon) should be co-prescribed low molecular weight heparin (LMWH) if the INR becomes sub-therapeutic (unlicensed indication).<br>LMWH prescribing in these circumstances should be undertaken by the department responsible for dosing warfarin[13]. |

**Table 3. Notes to accompany recommendations**

| Recommendation | Notes |
|---|---|
| **INITIAL ASSESSMENT** | |
| *2.2 When a person is initiated on oral anticoagulants in one care setting, the documented baseline assessment should be transferred with the prescribing responsibility.* | Baseline bleeding risk assessments have been an AWMSG recommendation since 2012[10] but are not consistently undertaken in all health boards. A systematic approach to baseline stroke and bleeding risk assessments is needed.<br><br>This is a recommended audit measure. |
| *2.3 The focus of AF management should be to identify affected people and undertake stroke risk assessment using the $CHA_2DS_2$-VASc risk assessment tool. Assess bleeding risk using an appropriate tool, such as HAS-BLED or AWMSG Risk/Benefit Assessment Tool for Oral Anticoagulant Treatment in People with AF, and address modifiable risk factors.* | Patients who have a past history of haemorrhagic stroke and subsequently develop a new indication for anticoagulation, such as AF, should be assessed by a specialist, usually a stroke physician. |
| **CHOICE OF AGENT** | |
| *3.2 NICE CG 180 states: 'Anticoagulation may be with apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist… Discuss the options for anticoagulation with the person and base the choice on their clinical features and preferences' (NICE 2014).*<br><br>*AWMSG recommendation:*<br>*Use of warfarin first line for most people will support the managed entry* of the newer agents. For some individuals, it may be necessary to consider an alternative agent after an informed discussion between the clinician and the person, and depending on local service models.*<br>*This recommendation (Sept 2014) will be reviewed in 12 months (Sept 2015).*<br><br>**Managed entry refers to the use of medicines in a clearly identified target patient population by the most appropriate group of prescribers in terms of their ability to make informed prescribing decisions. It enables specialist prescribers initially to gain experience with new medicines and promote the safe introduction of medicines. Following a predefined period, the drug should be reassessed using the information gathered during the monitoring process. Future use of the drug should then be reappraised.* | The MHRA Drug Safety Update was noted[14]. The group did not note compelling evidence to suggest that recommendation 3.2 should be removed. It was amended to include the NICE recommendation to provide further clarification.<br><br>NICE CG180 has been included to clarify the context of the draft AWMSG recommendation. The statement "and depending on local service models" has been added following consultation. Once the decision to initiate oral anticoagulation has been made, prompt access to therapy should be the priority. Health boards should ensure that local service models support prompt anticoagulation irrespective of anticoagulant choice. Particular consideration should be given to pathways supporting the effective anticoagulation for high-risk patients, such as those who have had a transient ischaemic attack and require rapid anticoagulation.<br><br>***Managed entry***<br>The 2012 statement was amended to clarify the phrase 'managed entry'.<br><br>Managed entry can be understood to reflect financial modelling. The included statement* was used to clarify and reflect the understanding of prescribers. |
| *3.3 The decision about whether to start treatment with dabigatran etexilate/rivaroxaban▼ or apixaban▼ should be made after an informed discussion between the clinician and the person about the risks and benefits compared with warfarin[3–5].*<br>*Consider using a patient decision aid (e.g. NICE Patient Decision Aid).*<br><br>*In selecting a novel antithrombotic, consideration should be given to:*<br>• *The relative lack of experience of long term use compared with a VKA or aspirin*<br>• *The lack of a licensed product for rapid reversal of the anticoagulant effect*<br>• *The limited data on use in patients at the extremes of body weight and those with hepatic impairment[15].* | The SIGN statement was added to the recommendations following consultation.<br><br>It should also be noted that medicine interactions occur with all oral anticoagulants[16].<br><br>Links to further resources were added to support decision making. |

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| **Time in therapeutic range**<br>*3.5 If poor anticoagulation control (see Recommendation 4.4 [TTR ≤ 65%]) cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person (NICE 2014)[1].* | The group considered: HAS-BLED TTR ≤ 60% and draft NICE ≤ 65% or range 60–65%. Members agreed to be consistent with NICE 2014: ≤ 65%. |
| **Patient information**<br>*3.6 People initiated on dabigatran etexilate, rivaroxaban or apixaban should be provided with written information and monitoring booklet, e.g. the EHRA Atrial Fibrillation Oral Anticoagulation Card.* | A standardised NHS Wales information sheet and log (modified from the EHRA Atrial Fibrillation Oral Anticoagulation Card) is under consideration. |
| **REVIEW** | |
| *4.1 For people who are taking an anticoagulant, review the need for anticoagulation and the quality of anticoagulation at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk (NICE 2014)[1] (see AWMSG Risk/Benefit Assessment Tool [2-page version]).* | Warfarin is dosed according to INR. For the newer agents the extent of anticoagulation is not routinely assayed and therefore no routine anticoagulant monitoring is required. However, for all anticoagulants, it is recommended that FBC, and renal and liver function tests are undertaken at least annually[11]. More frequent monitoring is advised if baseline tests are abnormal or there is intercurrent illness that may impact renal or hepatic function.<br><br>New oral anticoagulants – 'Impaired renal function may constitute a contraindication or recommendation not to use the anticoagulant medicine, or may require a dose reduction; recommendations differ for the three medicines'[14]. |
| **PRESCRIBING RESPONSIBILITY** | |
| *5.2 When a decision to initiate anticoagulation has been made, prompt initiation and stabilisation should normally be undertaken in the setting in which the decision was made.*<br><br>*If a primary care team do not have appropriate expertise to initiate warfarin (for example, general practices providing level 1 and 2 anticoagulation service) a baseline assessment should be sent to the oral anticoagulant clinic. The clinic will provide patient education and counselling but will not advise on the decision to initiate treatment.* | There was moderate support for these recommendations. |
| *5.4 The decision to start therapy with dabigatran etexilate, rivaroxaban or apixaban for non-valvular AF should be carried out by clinicians with an interest in stroke prevention and management of AF.*<br><br>*It may be appropriate for GP practices that provide level 3 and 4 anticoagulation services to make the decision to start dabigatran etexilate, rivaroxaban or apixaban depending on health board service models (AWMSG 2012 updated).* | The evidence for choice of oral anticoagulant therapy is evolving. Unless there are readily available decision aids from an independent source, most primary care prescribers would not have the expertise to discuss the pros and cons of alternative therapies with patients. Similarly, specialists considered it unlikely that they would be able to advise on choice of agent without seeing the patient personally.<br><br>The NICE Patient Decision Aid supports patients in the decision about whether to start an anticoagulant based on their preferences, and personal stroke and bleeding risk profile. It includes tables outlining the implications of warfarin versus new oral anticoagulant therapy. It does not include information on individual newer oral anticoagulants (the NICE Patient Decision Aid can be accessed here: www.nice.org.uk/guidance/cg180/resources/).<br><br>NICE Implementation Collaborative Consensus: 'Primary care prescribing of NOACs needs local leadership. Not all GPs can be expected to be expert in the area of anticoagulation for AF. As the epidemic of AF continues to increase, local anticoagulant "champions" will be needed to take the lead.'[17] |
| **MONITORING OF INR CONTROL (WARFARIN ONLY)** | |
| **Warfarin stabilisation**<br>*6.1 When calculating TTR:*<br>• *Use a validated method of measurement such as the Rosendaal method for computer-assisted dosing, or proportion of tests in range for manual dosing.*<br>• *Exclude measurements taken during the first 6 weeks of treatment.*<br>• *Calculate TTR over a maintenance period of at least 6 months (NICE 2014)[1].* | When considering the analysis of TTR, AWMSG 2012 stated, "TTR should not be assessed within the initiation period (normally 1–3 months)"[2]. This statement has been updated to 6 weeks, to reflect NICE 2014[1].<br><br>Whilst there is pressure on warfarin clinics, it is important that a patient is sufficiently stabilised on warfarin to ensure that they understand the monitoring requirements and that dosing information can be safely communicated. |

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| **INR over 8 – clinical governance** | It is thought that most health boards investigate and report INRs over 8. There is uncertainty regarding the collation of reports, feedback to prescribers or subsequent organisational learning. It is recommended that the clinical governance arrangements for INRs over 8 are investigated further and promoted.<br><br>The NICE Implementation Collaborative 'Supporting local implementation of NICE guidance on use of the novel (non-VKA) oral anticoagulants in non-valvular AF' states that local protocols should be available on management of bleeding in patients taking oral anticoagulants[17]. |
| **Audit and collation of adverse events**<br>*7.1 Rivaroxaban and apixaban are currently under "Additional Monitoring" by the EMA and all suspected ADRs should be reported, as well as all serious ADRs (see www.yellowcard.gov.uk for definition of serious) to dabigatran etexilate and warfarin. ADRs should be reported directly to the MHRA through the Yellow Card Scheme using the electronic form at www.yellowcard.gov.uk or cards available at the back of the BNF (AWMSG 2012 updated).* | The subgroup discussed the All Wales Risk/Benefit Assessment Tool and the opportunity to undertake national data collection. NICE CG180 makes the research recommendation: Do people with AF whose anticoagulant control is poor, or is predicted to be poor, with warfarin benefit from changing to one of the NOACs?[1]<br><br>Collation of data is undertaken in several localities in addition to the Royal College of Physicians' Sentinel Stroke National Audit Programme (SSNAP). It is recommended that members collaborate to develop an agreed core data set. |

## APPENDIX 1: RESOURCES

AWMSG guidance, NICE and NICE-accredited sources were used, including:

- AWMSG Advice on the Role of Oral Anticoagulants for the Prevention of Stroke and Systemic Embolism in People with Atrial Fibrillation
- Welsh Medicines Resource Centre Bulletin: Newer oral anticoagulants
- Scottish Intercollegiate Guidelines Network (SIGN) Prevention of stroke in patients with atrial fibrillation: a guide for primary care
- NICE CG180: Atrial Fibrillation
- SIGN 129. Antithrombotics: indications and management

**Key policy documents, reports and national audits**

- NHS Wales Delivery Framework 2013–2014

**Related national guidance**

- NICE CG144: Venous thromboembolic diseases
- 1000 Lives Plus – Reduction in INR > 5 and INR > 8 in hospital and community settings

**Existing indicators**

- GMS Contract QOF Wales 2014–2015

**Further resources**

- EHRA Practical Guide on the use of new oral anticoagulants in patients with non-valvular atrial fibrillation
- NICE CG182 Chronic kidney disease: early identification and management of chronic kidney disease in adults in primary and secondary care
- Greater Manchester Commissioning Support Unit: Prescriber Decision Support of New Oral Anti-Coagulants (NOACs)

For further information, see the AWMSG website: www.awmsg.org/.

## REFERENCES


1 National Institute for Health and Care Excellence. Clinical Guideline 180. Atrial fibrillation: the management of atrial fibrillation. 2014. Available at: http://guidance.nice.org.uk/CG180. Accessed Jul 2014.

2 All Wales Medicines Strategy Group. All Wales Advice on the Role of Oral Anticoagulants for the Prevention of Stroke and Systemic Embolism in People with Atrial Fibrillation. 2012. Available at: http://www.awmsg.org/docs/awmsg/medman/All%20Wales%20Advice%20on%20the%20Role%20of%20Oral%20Anticoagulants%20for%20the%20Prevention%20of%20Stroke%20and%20Systemic%20Embolism%20in%20People%20with%20Atrial%20Fibrillation%20(Full%20document).pdf. Accessed Jul 2014.

3 National Institute for Health and Care Excellence. Technology Appraisal 256. Rivaroxaban for the prevention of stroke and systemic embolism in people with atrial fibrillation. May 2012. Available at: http://www.nice.org.uk/guidance/TA256. Accessed Jul 2014.

4 National Institute for Health and Care Excellence. Technology Appraisal 249. Dabigatran etexilate for the prevention of stroke and systemic embolism in atrial fibrillation. Mar 2012. Available at: http://www.nice.org.uk/guidance/TA249. Accessed Jul 2014.

5 National Institute for Health and Care Excellence. Technology Appraisal 275. Apixaban for preventing stroke and systemic embolism in people with nonvalvular atrial fibrillation. 2013. Available at: http://www.nice.org.uk/guidance/TA275. Accessed Jul 2014.

6 Scottish Intercollegiate Guidelines Network. SIGN 129. Antithrombotics: indications and management. 2013. Available at: http://www.sign.ac.uk/pdf/qrg129.pdf. Accessed Jul 2014.

7 NHS Patient Safety. Actions that can make anticoagulant therapy safer: Alert and other information. Mar 2007. Available at: http://www.nrls.npsa.nhs.uk/resources/type/alerts/?entryid45=59814&q=0%C2%AC18%C2%AC. Accessed Jul 2014.

8 Lip GYH, Huber K, Andreotti F et al. Antithrombotic management of atrial fibrillation patients presenting with acute coronary syndrome and/or undergoing coronary stenting: executive summary—a Consensus Document of the European Society of Cardiology Working Group on Thrombosis, endorsed by the European Heart Rhythm Association (EHRA) and the European Association of Percutaneous Cardiovascular Interventions (EAPCI). *European Heart Journal* 2010; 31: 1311-8. Available at: http://eurheartj.oxfordjournals.org/content/31/11/1311.full.pdf.

9 All Wales Medicines Strategy Group. All Wales Risk/Benefit Assessment Tool for Oral Anticoagulant Treatment in People with Atrial Fibrillation. 2013. Available at: http://www.awmsg.org/docs/awmsg/medman/Oral%20anticoagulant%20treatment%20in%20people%20with%20AF%20risk-benefit%20assessment%20tool.pdf. Accessed Jul 2014.

10 All Wales Medicines Strategy Group. Warfarin Monitoring. 2012. Available at: http://www.awmsg.org/docs/awmsg/medman/Warfarin%20Monitoring.pdf. Accessed Jul 2014.

11 UK Medicines Information. Suggestions for Drug Monitoring in Adults in Primary Care. 2014. Available at: http://www.medicinesresources.nhs.uk/upload/documents/Evidence/Drug%20monitoring%20document%20Feb%202014.pdf. Accessed Jul 2014.

12 British Medical Association, Royal Pharmaceutical Society of Great Britain. *British National Formulary. No. 66.* 2013.

13 All Wales Medicines Strategy Group. Prescribing of low molecular weight heparins in Wales. 2010. Available at:

http://www.awmsg.org/docs/awmsg/medman/Prescribing%20of%20Low%20Weight%20Molecular%20Heparin%20[Full%20document].pdf. Accessed Jul 2014.

14 Medicines and Healthcare products Regulatory Agency. Drug Safety Update. New oral anticoagulants apixaban (Eliquis▼), dabigatran (Pradaxa) and rivaroxaban (Xarelto▼): risk of serious haemorrhage-clarified contraindications apply to all three medicines. Oct 2013. Available at: http://www.mhra.gov.uk/Safetyinformation/DrugSafetyUpdate/CON322347. Accessed Jul 2014.

15 Scottish Intercollegiate Guidelines Network. Prevention of stroke in patients with atrial fibrillation. 2014. Available at: http://www.sign.ac.uk/pdf/AF_publication.pdf. Accessed Jul 2014.

16 Welsh Medicines Resource Centre. WeMeReC Bulletin. Newer oral anticoagulants. 2013. Available at: http://www.wemerec.org/Documents/Bulletins/AnticoagBulletin2013Online.pdf. Accessed Jul 2014.

17 NICE Implementation Collaborative. Consensus: Supporting local implementation of NICE guidance on use of the novel (non-Vitamin K antagonist) oral anticoagulants in non-valvular atrial fibrillation. 2014. Available at: http://www.nice.org.uk/guidance/cg180/resources/cg180-atrial-fibrillation-nic-consensus-statement-on-the-use-of-noacs2. Accessed Jul 2014.