

Service Specification No.	11X-01-1
Service	Anti-Coagulation Monitoring (Old Level 4)
Commissioner Lead	Sheryl Vincent, Commissioning Manager
Provider Lead	
Period	1 April 2015 – 31 March 2018
Date of Review	2014/15

1. Population Needs

1.1 National/local context and evidence base

2. Outcomes

2.1 NHS Outcomes Framework Domains & Indicators

Domain 1	Preventing people from dying prematurely	✓
Domain 2	Enhancing quality of life for people with long-term conditions	✓
Domain 3	Helping people to recover from episodes of ill-health or following injury	✓
Domain 4	Ensuring people have a positive experience of care	✓
Domain 5	Treating and caring for people in safe environment and protecting them from avoidable harm	✓

2.2 Local defined outcomes

Not applicable

3. Scope

Aims and objectives of service

1.2 The Provider shall ensure that the Anti-Coagulation Monitoring Service is one in which:

- there is a minimisation of potential side effects of warfarin by utilising regular monitoring to stabilise the International Normalised Ratio (INR) levels of patients while continuing to maximise the effective benefits of such treatment;
- maintenance of Patients is controlled appropriately;
- the requirement for the continuity of therapy is reviewed regularly; and
- therapy is discontinued when appropriate.

Services not included in specification

1.3 The Somerset Clinical Commissioning Group will register each level 4 provider with NEQAS for the external monitoring, this funding will be held separately by the Somerset Clinical Commissioning Group but the provider will be expected to comply with the requirements.

Service description/care pathway

SERVICE REQUIREMENTS

- 1.4 The Provider shall ensure that the Anti-Coagulation Monitoring Service includes, but is not limited to:

Service specification and criteria

- ensuring that all newly diagnosed registered patients (and/or their carers and support staff when appropriate) receive appropriate management and prevention of secondary complications for their condition including the provision of Patient-held booklets
- preparing individual management plans with registered patients, which give the diagnosis, planned duration and therapeutic range to be obtained during therapy
- ensuring that at initial diagnosis and at least annually, an appropriate review of the registered patient's health is carried out including checks for potential complications and, as necessary, a review of the registered patient's own monitoring records
- utilise dosing software to confirm the clinical decision (DAWN, INRStar and RAID being appraised at present) and recommended meter (to be confirmed on outcome of options appraisal being undertaken, likely to be one with connectivity to the patient record to create a clear audit trail)
- when appropriate, promptly referring registered patients to other necessary services and relevant support agencies using locally agreed guidelines where these exist (need to refer to Somerset Clinical Commissioning Group Anticoagulation policy once agreed);
- ensuring that systematic call and recall of registered patients on the register takes place (see Appendix 1 for maximum recall periods and conditions that cause warfarin sensitivity)
- have a nominated responsible General Practitioner (GP)

1.5 Data collection

- developing and maintaining an up-to-date register of all registered patients using the Anti-Coagulation Monitoring Service, indicating patient name, date of birth, and the indication and length of treatment, including the target International Normalised Ratio: blood test result (INR) see Appendix 2 for target INRs;
- maintaining adequate records of the Anti-Coagulation Monitoring Service, including relevant known information, as appropriate, including for example, the number of bleeding episodes requiring hospital admission and deaths caused by anti-coagulants;
- maintaining records and acting upon the outcomes of the quality assurance tests completed each month;
- ensuring that the Anti-Coagulation Monitoring Service is provided in accordance with British Committee for Standards in Haematology (2005 update) and any other national and local guidance relevant to the service; and
- if a patient requires Vitamin K for over-coagulation the patient should be admitted to the acute Trust for treatment.

CONSENT

- 1.6 In each case the patient should be fully informed of the treatment options, risks and the

treatment proposed.

- 1.7 National guidelines suggest that written consent should be obtained from patients. The Somerset Clinical Commissioning Group wishes the providers to note that their interpretation of 'written consent' in this context is the recording of consent by READ code. Where the provider READ codes consent given, the Somerset Clinical Commissioning Group will take this to mean that the patient has been fully informed of the treatment options and risks, has been offered written information and has given consent.

HEALTH RECORD

- 1.8 The Provider shall ensure that all clinical information related to the National Enhanced Service (NES) is recorded in the registered patient's own GP held lifelong record, including the completion of the "significant event" record that the registered patient is on warfarin, if relevant. Where a patient ceases to take warfarin then the patient record should be duly updated.
- 1.9 The Provider shall
- use the following READ Codes to supply monthly data to the Primary Care Trust, and
 - action any changes and Read Codes as instructed by the Somerset Clinical Commissioning Group during the term of this Agreement

Anticoagulation Monitoring	
Diagnosis which would be affected:	
DVT	G801
MI	G30
Pulmonary Embolism	G401
TIA	G65
AF	G5730
Initial Warfarin Assessment	66Q1
Follow up Warfarin Assessment	66Q2
Warfarin Therapy Started	66Q6
Warfarin Therapy Stopped	66Q5
Warfarin dose changed	66Q4
Warfarin Therapy unchanged	66Q9
Warfarin Treatment plan	66QA
Warfarin side effects	66Q3
Target INR	66Q7
INR normal	42QE0
INR abnormal	42QE1
Warfarin declined	8I3E
Patient medication advice	9c07
Warfarin not tolerated	8I71
Warfarin CI	8I25
Adverse reaction to Warfarin	TJ421
Calf vein thrombosis	G8020
Bioprosthetic valve	79142
Enhanced Services code for anticoagulation monitoring	9k2

TRAINING AND ACCREDITATION

- 1.10 The Provider shall ensure that each member of staff has received appropriate training.

Appropriate training is defined below:

- the nominated GP will complete the three hour training provided by the Somerset Clinical Commissioning Group; and
- at least one other member of the Provider team will have completed the training for nurses provided by the Primary Care Trust, involving a series of lectures (which can be completed on a distance learning basis) and a three hour training course; and
- at least one member of the Provider team will have received training from the equipment manufacturer or Somerset Clinical Commissioning Group nominated trainer on the use of the equipment (this may be covered by the three hour session detailed above). This training should be updated every two years
- all other staff involved in providing this service will receive cascade training internally from the trained members of the team. Dates of the cascade training and any following supervision should be recorded as part of the individuals Continuing Professional Development (CPD) log
- all staff involved in providing this service should have their role reviewed by the nominated GP as part of the annual appraisal process to identify any further training needs over and above the training required in this specification;
- all staff performing INR testing should have two yearly updates/refreshers training following the initial training.

1.11 Training will be expected to cover:

- sample requirement and specimen collection
- sample preparation
- stability of sample and reagents
- analyse measurement
- maintenance, calibration and cleaning of instrument
- appropriate use of equipment and consequences of inappropriate use
- reporting of results
- knowledge of normal and abnormal results and actions in the event of an abnormal result
- performance of quality control
- documentation of test and quality control results
- safety.

1.12 The Somerset Clinical Commissioning Group will require evidence of the training completed (if using the accredited courses provided by Birmingham and Salford universities) including equipment training. In addition the dates of the cascade training to other members of staff should be recorded and may be requested by the Primary Care Trust.

1.13 Providers should ensure that they are familiar with and working to the workforce competencies identified by the National Patient Safety Agency, see Appendix 3.

INFECTION CONTROL

- 1.14 Providers must have infection control policies that are compliant with national guidelines , which include:

- disposal of clinical waste
- needle stick incidents
- environmental cleanliness, and
- standard precautions, including hand washing

REVIEW AND AUDIT

- 1.15 The Provider shall:

- carry out clinical audit of the care of patients against the above criteria, including audit of all untoward incidents. This should also review the success of the Provider in maintaining at least 50% of patients within 0.5 of the designated INR range, with results made available to the Primary Care Trust

- 1.16 The Provider shall conduct a joint annual review of the Anti-Coagulation Monitoring Service in conjunction with the Primary Care Trust, which must include:

- information on the number of patients being monitored, the indications of anticoagulation, e.g. DVT etc, the duration of treatment and evolving record of dosing history and INRs
- brief details as to arrangements for recording, monitoring and adapting each of the aspects highlighted above
- details of any computer-assisted decision-making equipment used and arrangements for internal and external quality assurance
- details of training and education relevant to the Anti-Coagulation Monitoring Service received by practitioners and staff; and
- details of the standards used for the control of anticoagulation

SIGNIFICANT/ADVERSE EVENTS

- 1.17 The Department of Health emphasizes the importance of collected incidents nationally to ensure that lessons are learned across the NHS. A proactive approach to the prevention of recurrence is fundamental to making improvements in patient safety.

- 1.18 The Provider should be aware of the various reporting systems such as:

- the National Patient Safety Agency National Learning and Reporting System
- the Medicines and Healthcare products Regulatory Agency reporting systems for adverse reactions to medication (yellow card system), and accidents involving medical devices; and
- the legal obligation to report certain incidents to the Health and Safety Executive under the Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)

- 1.19 In addition to any regulatory requirements the Somerset Clinical Commissioning

	<p>Groupwishes the Provider to use a Significant Event Audit system (agreed with the Primary Care Trust) to facilitate the dissemination of learning, minimising risk and improving patient care and safety.</p>
1.20	<p>In addition to their statutory obligations, the Provider will give notification, within 72 hours of the information becoming known to him/her, of all emergency admissions or deaths of any patient treated by the Provider under this enhanced service, where such admission or death is or may be due to the Providers treatment of the relevant underlying medical condition covered by this specification. Notifications are to be sent to the Director of Nursing and Patient Safety with a copy to the Senior Primary Care Commissioning Manager for the specific locality.</p>
	<p>PATIENT AND PUBLIC INVOLVEMENT</p>
1.21	<p>The service will conform to professional and legal requirements especially clinical guidelines and standards of good practice issued by National Institute for Clinical Excellence (NICE) and professional regulatory bodies, and legislation prohibiting discrimination. It is anticipated that for the majority of enhanced services translated information will be available via the Department of Health. If a patient wishes to communicate via a language that is not covered via these leaflets please let the Somerset Clinical Commissioning Group Equality and Diversity Lead know and use the commissioned interpretation and translation service (Applied Language Solutions) to facilitate the consultation and provision of information to the patient. Use of the interpretation/translation service should be recorded in the patient's lifelong medical record including confirmation of the first language of the patient.</p>
1.22	<p>Practices should encourage, consider and report any patient feedback (positive and negative) on the service that they provide and use it to improve the care provided to patients, particularly if there are plans to alter the way a service is delivered or accessed.</p>
	<p>REFERENCES</p>
1.23	<p>These booklets can be obtained from the Somerset Clinical Commissioning Group Support Services at East Reach House, Taunton, TA1 3EN.</p> <ul style="list-style-type: none"> • Baglin TP et al, British Journal of Haematology 2006: 132, pp277-285 • Baglin TP et al, British Journal of Haematology 2007: 136, pp 26-29 • The Health Act 2006: Code of Practice for the Prevention and Control of Healthcare Associated Infections. The Stationary Office, 2006. • British Society for Haematology. 2005. 132, pp.277-285.
1.24	<p>Population covered</p> <p>Any acceptance and exclusion criteria and thresholds</p>
1.25	<p>Not applicable</p> <p>Interdependence with other services/providers</p>
1.26	<p>Not applicable</p>
4.	<p>Applicable Service Standards</p>
4.1	<p>Applicable national standards (e.g. NICE)</p>

4.2	Applicable standards set out in Guidance and/or issued by a competent body (e.g. Royal Colleges)
	Not applicable
4.3	Applicable local standards
	Not applicable
5. Applicable quality requirements and CQUIN goals	
5.1	Applicable Quality Requirements (See Schedule 4A-D)
	The Provider shall ensure that:
	<ul style="list-style-type: none"> quality assurance must be carried out in accordance with recommendations of the British Committee for Standards in Haematology and National Patient Safety Agency , this includes a quality control sample on the first working day of each month (unless NEQAS sample is due) plus a duplicate patient sample sent to the pathology service at the local acute trust for every 25th patient daily internal quality assurance checks must be carried out to test performance of blood testing machinery in accordance with the machinery manufacturer's requirements. This includes checking refrigerator temperatures and cleaning external quality assurance checks must be conducted on a three-monthly basis to verify the accuracy of blood testing machinery and dosing (all providers will be registered with UK NEQAS by the Somerset Clinical Commissioning Group and required to comply with the relevant testing.) any laboratory used to test blood as part of the Anti-Coagulation Monitoring Service has established quality assurance schemes in place and is accredited by Clinical Pathology Accreditation (UK) Ltd protocols for taking blood samples must be in place to support the clear labelling of samples being tested elsewhere a standard operating procedure must be in place regarding the operation of the equipment in accordance with the manufacturers guidelines and training
5.2	Applicable CQUIN goals (See Schedule 4E)
6. Location of Provider Premises	
6.1	The Provider's Premises are located at:
	As defined in Schedule 5 Part A of the Contract Particulars
7. Individual Service User Placement	
	Not applicable

APPENDIX 1

WARFARIN THERAPY MAXIMUM RECALL PERIODS DURING MAINTENANCE THERAPY

- 1 For patients in whom no new factor has arisen, the frequency of monitoring can be determined by the criteria shown in the table below.
- 2 Warfarin therapy: maximum recall periods during maintenance therapy (not initiation)

(Based on data from Ryan et al (1989) British Medical Journal 299, 1207-1209)

One INR high:	recall in 7-14 days (stop treatment 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

Note: Patients seen after discharge from hospital with prosthetic valves may need more frequent INRs in the first few weeks.

- 3 When a condition known to cause alteration in the dose requirement of warfarin occurs (e.g. a potentially interacting drug), or the patient has an acute intercurrent illness, frequency of monitoring should be increased.
- 4 The following conditions cause warfarin sensitivity (i.e. need for reduced dose):
 - liver dysfunction
 - heart failure
 - hyperthyroidism
 - some drugs
 - acute pyrexial episode
- 5 Some conditions cause warfarin requirements to be increased (i.e. need for greater than normal dose):
 - hypothyroidism
 - vitamin K containing remedies, e.g. some herbal remedies and enteral feeds
 - some drugs.
- 6 In addition vitamin K containing foods such as green leafy vegetables may affect dosage requirements.

APPENDIX 2

THERAPEUTIC LEVELS

Table 1: Indications for oral anticoagulation target international normalised ratio (INR) and grade of recommendation

Indication	Target INR	Grade of recommendation
Pulmonary embolus	2.5	A
Proximal deep vein thrombosis	2.5	A
Calf vein thrombus	2.5	A
Recurrence of venous thromboembolism when no longer on warfarin therapy	2.5	A
Recurrence of venous thromboembolism whilst on warfarin therapy	3.5	C
Symptomatic inherited thrombophilia	2.5	A
Antiphospholipid syndrome	2.5	A
Non-rheumatic atrial fibrillation	2.5	A
Atrial fibrillation due to rheumatic heart diseases, congenital heart disease and thyrotoxicosis	2.5	C
Cardioversion	2.5 or 3.0 (see text)	B
Mural thrombus	2.5	B
Cardiomyopathy	2.5	C
Mechanical prosthetic heart valve - aortic	3.0 or 2.5 (See table 2)	B
Mechanical prosthetic heart valve – mitral	3.5 or 3.0 (See table 2)	B
Bioprosthetic valve	2.5 if anticoagulated (see original 1998 guidelines)	
Ischaemic stroke without atrial fibrillation	Not indicated	C
Retinal vessel occlusion	Not indicated	C
Peripheral arterial thrombosis	Not indicated	A
Arterial grafts	2.5 if anticoagulated (see text)	
Coronary artery thrombosis	2.5 if anticoagulated (see text)	
Coronary artery graft	Not indicated	A
Coronary angioplasty and stents	Not indicated	A

Table 2: Recommendations for valve-location-specific INRs

Valve Type	Position	Target INR
Bileaflet	Aortic	2.5
Tilting Disk	Aortic	3.0
Bileaflet	Mitral	3.0
Tilting Disk	Mitral	3.0
Caged Ball or Caged Disk	Aortic or Mitral	3.5

APPENDIX 3

WORK COMPETENCES FOR ANTICOAGULANT THERAPY

ANTICOAGULANT COMPETENCE 1:

Initiating anticoagulant therapy

Summary	This proposed workforce competence is directly applicable to healthcare professionals who undertake the initiation and prescribing of anticoagulant therapy for adult patients. It includes reviewing the indications and contraindications for use, selecting the appropriate drug regimen and treatment monitoring plan, and communicating the proposed treatment plan to the patient and other members of the healthcare team. It also includes the modification of subsequent prescriptions in light of patient tolerance, side effects, complications and response to treatment.
Indicative links to KSF Dimension and Level	<i>Health and wellbeing HWB6:</i> Assessment and treatment planning <i>Level 4:</i> Assess physiological and psychological functioning when there are complex and/or undifferentiated abnormalities, diseases and disorders and develop, monitor and review related treatment plans.
Origin	This is a new workforce competence proposed and developed by the National Patient Safety Agency.
Activity scope	<p>Key words and concepts:</p> <p><i>Anticoagulant</i> Any medicine used to prevent the formation of blood clots. Includes oral vitamin K antagonist anticoagulants and parenterally administered heparins.</p> <p><i>Prescription</i> The document that describes the medication determined by a properly authorised individual for an individually named patient. It includes the medication to be used, the dose, dilution, mode of delivery and time period for delivery.</p> <p><i>Communication with professional colleagues</i> Includes communication within and between appropriate members of teams.</p> <p>This workforce competence covers prescribing anticoagulant treatment for adult patients only. This includes injectable anticoagulants: (sodium heparin, calcium heparin, low molecular weight heparin, danaparoid and fondaparinux); and oral anticoagulants (warfarin, acenocoumarol (nicoumalone) and phenindione).</p>
Performance criteria	<p>You need to:</p> <ol style="list-style-type: none"> 1. Read the patient's notes and prescription, and identify any special instructions, investigations (including abnormal blood test results), or issues for which you need to seek advice. 2. Assess the appropriateness of the intended treatment against the patient's current health and social status, medication, other treatment and the patient's preferences. 3. Determine the appropriate loading dose regimen for the patient,

	<p>which drugs to prescribe, the dosage, the frequency of administration, and the most effective route of administration.</p> <ol style="list-style-type: none"> 4. Document the indication for use, target INR, duration of treatment and monitoring plan in the patient's notes. 5. Order baseline blood tests prior to the administration of the first dose of anticoagulant. 6. Ensure that the patient receives verbal and written information concerning their anticoagulant therapy prior to the first dose of anticoagulant. 7. Prescribe the anticoagulant treatment according to legislation, national and local prescribing guidelines and relevant clinical information to ensure safe and optimal delivery of treatment. 8. Include in the prescription: <ul style="list-style-type: none"> • the approved name of anticoagulant drug(s) • dose, route, method and duration of administration • where appropriate, diluent and infusion volume, final infusion concentration and rate of administration. 9. Prescribe legibly, ensuring your intention for treatment and monitoring is clear, accurate and complete and that there are no ambiguities. 10. Review the anticoagulant prescription in accordance with the monitoring plan. 11. Modify any subsequent prescriptions in accordance with national and local guidelines and in light of the laboratory test results, side effects, complications and response to treatment. 12. Recognise when you need help and seek advice and support from an appropriate source when the needs of the individual and the complexity of the case are beyond your competence and capability. 13. When transferring the care of the patient to another healthcare team and especially on discharge from hospital, ensure that the new team is sent information concerning the clinical indication for use, target INR, intended duration of therapy, current prescription and recent laboratory test results.
Knowledge and understanding	<p>You need to apply:</p> <p><i>Legislation, regulations and guidelines</i></p> <ol style="list-style-type: none"> 1. An in-depth understanding of national and local anticoagulant guidelines and their application. 2. A working understanding of local guidelines for patient records, their storage and confidentiality of information. 3. An in-depth understanding of the national and local prescribing guidelines.

	<ol style="list-style-type: none"> 4. A working understanding of the Guidelines on the Administration of Medicines. 5. A working understanding of risk management, patient safety principles and causes of medication errors. <p><i>Clinical knowledge</i></p> <ol style="list-style-type: none"> 6. A working understanding of the disease progression and the potential impact on physiological systems. 7. A working understanding of the relevance of other treatment modalities and clinical conditions. 8. An in-depth understanding of the advantages and disadvantages of the proposed treatment and its alternatives. 9. An in-depth understanding of the indications and contraindications for the proposed treatment. 10. An in-depth understanding of the routes by which treatment can be administered and of appropriate dosage. 11. An in-depth understanding of the side effects of the proposed treatment, and their assessment, monitoring, prevention and management. 12. An in-depth understanding of relevant anatomy and pathology. 13. An in-depth understanding of the normal parameters for routine investigations. 14. An in-depth understanding of the principles and practice of prescribing anticoagulants. 15. An in-depth understanding of the side effects of anticoagulant drugs, how to recognise them and the appropriate treatment regimens. 16. An in-depth understanding of diagnosis, care plans, protocols and guidelines. 17. An in-depth understanding of the mode of action and side effects of anticoagulants. 18. A working understanding of relevant peer reviewed literature. <p><i>Procedures and patient management</i></p> <ol style="list-style-type: none"> 19. A factual knowledge of the roles and responsibilities of other team members. 20. A working understanding of the limits of one's own knowledge and experience, and the importance of not operating beyond these.
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ANTICOAGULANT COMPETENCE 2:

Maintaining oral anticoagulant therapy

Summary	This proposed workforce competence is directly applicable to healthcare professionals who undertake the monitoring and prescribing of ongoing anticoagulant therapy for adult patients. It includes reviewing the indications and contraindications for use and dosage modification in light of side effects, complications and response to treatment, and communicating the proposed treatment plan to the patient and other members of the healthcare team. It also includes helping individuals to change their behaviour and aspects of lifestyle.
Indicative links to KSF Dimension and Level	<i>Health and wellbeing HWB6:</i> Assessment and treatment planning <i>Level 4:</i> Assess physiological and psychological functioning when there are complex and/or undifferentiated abnormalities, diseases and disorders, and develop, monitor and review related treatment plans.
Origin	This is a new workforce competence proposed and developed by the National Patient Safety Agency.
Activity scope	<p>Key words and concepts:</p> <p><i>Anticoagulant</i> Any medicine used to prevent the formation of blood clots. Includes oral vitamin K antagonist anticoagulants and parenterally administered heparins.</p> <p><i>Prescription</i> The document that describes the medication determined by a properly authorised individual for an individually named patient. It includes the medication to be used, the dose, dilution, mode of delivery and time period for delivery.</p> <p><i>Communication with professional colleagues</i> Includes communication within and between appropriate members of teams.</p> <p>This workforce competence covers maintenance of oral anticoagulant treatment for adult patients only. This includes oral anticoagulants (warfarin, acenocoumarol (nicoumalone) and phenindione).</p>

Performance criteria	<p>You need to:</p> <ol style="list-style-type: none"> 1. Read the patient's notes, previous prescription and protocol, and identify any special instructions. Review the results of all relevant investigations (including blood test results) and identify any issues on which you need to seek advice. 2. Greet, accurately identify the patient and introduce yourself and any colleagues present to the patient and/or carer. 3. If a carer is present, ensure that the patient consents to their presence throughout the assessment and is willing for them to receive the same information as that given to the patient. 4. Undertake and document measurement of the INR in accordance with national and local guidelines. 5. Review the patient's history since their last attendance.
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	<p>6. Explain the treatment alternatives and their risks and benefits to the patient and/or carer together with any potential side effects and their management, and accurately answer any questions at a pace and level that is appropriate to:</p> <ul style="list-style-type: none"> • their emotional state • their level of understanding • their culture and background • their preferred ways of communicating • their needs. <p>7. Explain any lifestyle changes that will be needed in order to ensure good anticoagulant control.</p> <p>8. Check that the patient and/or carer understand the treatment choices being offered, the implications of this choice and any potential side effects together with their management.</p> <p>9. Ensure that the patient receives verbal and written information concerning the way in which their anticoagulant therapy is to be continued.</p> <p>10. Prescribe the anticoagulant treatment according to legislation, national and local prescribing guidelines and relevant clinical information to ensure safe and optimal delivery of treatment.</p> <p>11. Include in the prescription:</p> <ul style="list-style-type: none"> • the approved name of anticoagulant drug(s) • dose, route, method and duration of administration • where appropriate, diluent and infusion volume, final infusion concentration and rate of administration. <p>12. Prescribe legibly, ensuring your intention for treatment and monitoring is clear, accurate and complete and that there are no ambiguities.</p> <p>13. Discontinue one or more anticoagulant drugs in accordance with national and local guidelines and the patient's response.</p> <p>14. Update the patient-held record of anticoagulant treatment.</p> <p>15. Inform the patient's multi-disciplinary team, including GP and community pharmacist, about the outcome of the assessment, in accordance with local policy.</p> <p>16. Record and report your findings, recommendations, patient and/or carer's response and issues to be addressed according to local guidelines.</p> <p>17. Recognise when you need help and seek advice and support from an appropriate source when the needs of the individual and the complexity of the case are beyond your competence and capability.</p> <p>18. When transferring the care of the patient to another healthcare team and especially on discharge from hospital, ensure that the new team is sent information concerning the clinical indication for</p>
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	use, target INR, intended duration of therapy, current prescription and recent laboratory test results.
Knowledge and understanding	<p>You need to apply:</p> <p><i>Legislation, regulations and guidelines</i></p> <ol style="list-style-type: none"> 21. An in-depth understanding of national and local anticoagulant guidelines and their application. 22. A working understanding of local guidelines for patient records, their storage and confidentiality of information. 23. An in-depth understanding of the national and local prescribing guidelines. 24. A working understanding of the Guidelines on the Administration of Medicines. 25. A working understanding of risk management, patient safety principles and causes of medication errors. <p><i>Clinical knowledge</i></p> <ol style="list-style-type: none"> 26. A working understanding of the disease progression and the potential impact on physiological systems. 27. A working understanding of the relevance of other treatment modalities and clinical conditions. 28. An in-depth understanding of the advantages and disadvantages of the proposed treatment and its alternatives. 29. An in-depth understanding of the indications and contraindications for the proposed treatment. 30. An in-depth understanding of the routes by which treatment can be administered and of appropriate dosage. 31. An in-depth understanding of the side effects of the proposed treatment, and their assessment, monitoring, prevention and management. 32. An in-depth understanding of relevant anatomy and pathology. 33. An in-depth understanding of the normal parameters for routine investigations. 34. An in-depth understanding of the principles and practice of prescribing anticoagulants. 35. An in-depth understanding of the side effects of anticoagulant drugs, how to recognise them and the appropriate treatment regimens. 36. An in-depth understanding of diagnosis, care plans, protocols and guidelines. 37. An in-depth understanding of the mode of action and side effects of anticoagulants.

	<p>38. A working understanding of relevant peer reviewed literature.</p> <p><i>Technical knowledge</i></p> <p>39. A working understanding of different near patient testing devices and their care and maintenance requirements.</p> <p><i>Procedures and patient management</i></p> <p>40. A factual knowledge of the organisations that offer support relevant to the patient's needs.</p> <p>41. A factual knowledge of the roles and responsibilities of other team members.</p> <p>42. A working understanding of the limits of one's own knowledge and experience and the importance of not operating beyond these.</p> <p>43. A working understanding of the guidelines relevant to your own and others' roles and your own and others' responsibilities, accountability and duties.</p>
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ANTICOAGULANT COMPETENCE 3:

Managing anticoagulants in patients requiring dental surgery

Summary	<p>This proposed workforce competence is directly applicable to healthcare professionals who undertake the prescribing and monitoring of anticoagulant therapy in patients who require dental surgical procedures. It includes identifying patients who are unsuitable for dental surgical procedures in primary care. It also includes communicating the proposed treatment plan to the patient team responsible for the dental surgery and other healthcare professionals involved in the routine care of the patient.</p> <p>Not all aspects of this competence statement will apply equally to all healthcare professionals. Individual elements should be applied as appropriate to each healthcare professional's role within the patient care pathway.</p>
Indicative links to KSF Dimension and Level	<p><i>Health and wellbeing HWB6:</i> Assessment and treatment planning</p> <p><i>Level 4:</i> Assess physiological and psychological functioning when there are complex and/or undifferentiated abnormalities, diseases and disorders, and develop, monitor and review related treatment plans.</p>
Origin	<p>This is a new workforce competence proposed and developed by the National Patient Safety Agency.</p>

Activity scope	<p>Key words and concepts:</p> <p><i>Anticoagulant</i></p> <p>Any medicine used to prevent the formation of blood clots. Includes oral vitamin K antagonist anticoagulants and parenterally administered heparins.</p>
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	<p><i>Prescription</i> The document that describes the medication determined by a properly authorised individual for an individually named patient. It includes the medication to be used, the dose, dilution, mode of delivery and time period for delivery.</p> <p><i>Communication with professional colleagues</i> Includes communication within and between appropriate members of teams.</p> <p>This workforce competence covers the prescribing and monitoring of anticoagulant therapy in patients who require dental surgical procedures. It includes identifying patients who are unsuitable for dental surgical procedures in primary care and advising the specialist dental surgery team on anticoagulation. It also includes communicating the proposed treatment plan to the patient, the team responsible for the dental surgery and other healthcare professionals involved in the routine care of the patient, such as the GP and community pharmacist.</p>
Performance criteria	<p>You need to:</p> <ol style="list-style-type: none"> 1. Read the patient's notes and prescription, and identify any special instructions, investigations (including abnormal blood test results) or issues for which you need to seek advice. 2. Assess the patient's suitability for primary care dental surgery according to current national* and local guidelines. 3. Arrange for an INR measurement within 72 hours of surgery. 4. Review the patient's history of anticoagulant treatment and INR results. 5. Assess whether the patient's INR is adequately controlled or whether dosage adjustments are necessary before surgery in accordance with national and local guidelines. 6. Explain the planned treatment and its risks and benefits to the patient and/or carer together with any potential side effects and their management, and accurately answer any questions at a pace and level that is appropriate to: <ul style="list-style-type: none"> • their emotional state • their level of understanding • their culture and background • their preferred ways of communicating • their needs. 7. Advise on suitable post-operative analgesics in accordance with local and national guidelines. 8. Explain any lifestyle changes that will be needed in order to ensure good anticoagulant control during the preoperative period. 9. Check that the patient and/or carer understand the treatment plan together with the risks and benefits. 10. Ensure that the patient receives verbal and written information

	<p>concerning the way in which their anticoagulant therapy is to be continued.</p> <ol style="list-style-type: none"> 11. Update the patient-held record of anticoagulant treatment. 12. Record and report your findings, recommendations, patient and/or carer's response and issues to be addressed, in the patient's record according to local guidelines. 13. Recognise when you need help and seek advice and support from an appropriate source when the needs of the individual and the complexity of the case are beyond your competence and capability. 14. An in-depth understanding of the side effects of anticoagulant drugs, how to recognise them and the appropriate treatment regimens. 15. An in-depth understanding of diagnosis, care plan, protocol and guidelines. 16. An in-depth understanding of the mode of action and side effects of anticoagulants. 17. A working understanding of relevant peer reviewed literature. <p><i>Procedures and patient management</i></p> <ol style="list-style-type: none"> 18. A factual knowledge of the roles and responsibilities of other team members. 19. A working understanding of the limits of one's own knowledge and experience and the importance of not operating beyond these. 20. A working understanding of the guidelines relevant to your own and others' roles and your own and others' responsibilities, accountability and duties.
*National guidance	<p>Guidance produced nationally includes:</p> <p>Baglin T et al. Guidelines on oral anticoagulation (warfarin): third edition – 2005 update. <i>British Journal of Haematology</i> 2005; 132: 277-285. Available at: www.bcsghguidelines.com</p> <p>National Patient Safety Agency. <i>Managing patients who are taking warfarin and undergoing minor oral surgery or dental extractions</i>. Available at: www.npsa.nhs.uk/health/alerts</p> <p>National Patient Safety Agency. <i>Patient Safety Alert – Actions that can make anticoagulant therapy safer</i>. (2007). Available at: www.npsa.nhs.uk/health/alerts</p> <p>British National Formulary. 52nd and subsequent editions.</p>

ANTICOAGULANT COMPETENCE 4:

Dispensing oral anticoagulants

Summary	This proposed competence is directly applicable to healthcare professionals who undertake the dispensing of anticoagulants.
Indicative links to KSF Dimension and Level	<p><i>Health and wellbeing HWB4:</i> Enablement to address health and wellbeing needs</p> <p><i>Level 3:</i> Enable people to address specific needs in relation to health and wellbeing</p>
Origin	This is a new workforce competence proposed and developed by the National Patient Safety Agency.
Activity scope	<p>Key words and concepts:</p> <p><i>Dispensing</i> Taking responsibility to ensure that the required drugs are available to the patient or to the ward in the correct form, amount and in date for nurse administration or patient self-administration.</p> <p>This workforce competence covers dispensing of anticoagulant treatment for adult patients only. This includes oral anticoagulants (warfarin, acenocoumarol (nicoumalone) and phenindione).</p>
Performance criteria	<p>You need to:</p> <ol style="list-style-type: none"> Find out what the patient already understands and remembers. Ensure that the patient has been issued with appropriate information (e.g. yellow book) and has had the contents fully explained to them. Ensure that arrangements are in place for INR monitoring and follow-up, and that the patient and/or carer understand these. Accurately answer any questions relating to the patient's therapy at a pace and level that is appropriate to: <ul style="list-style-type: none"> their emotional state their level of understanding their culture and background their preferred ways of communicating their needs. Explain in clear and simple terms what the medicines are for and when the patient needs to take them. Explain any lifestyle changes that will be needed in order to ensure good anticoagulant control. Check that the patient and/or carer understand the prescribed treatment and the lifestyle implications of that treatment. Ensure that the patient and/or carer understands how to take the correct dose in relation to the number of milligrams and the number of tablets to be taken. Ensure the drugs are dispensed with written instructions (e.g. patient information leaflet) on what they are for, how and when to

	<p>take them, the date dispensed and the expiry date.</p> <p>10. Explain the importance of remembering to take every dose prescribed.</p> <p>11. Inform the patient of side effects or symptoms the drugs may produce, how common or rare these are, how to recognise them and what action to take.</p> <p>12. Ensure the patient is aware of the potential for anticoagulants to interact with other medicines, including those bought over-the-counter, and that they understand the need to consult with a pharmacist or the prescriber before taking other medicines.</p> <p>13. Offer compliance aids, if appropriate, to help the patient to remember to take every dose prescribed.</p>
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ANTICOAGULANT COMPETENCE 5:

Preparing and administering heparin therapy

Summary	This proposed workforce competence is directly applicable to healthcare professionals who undertake the preparation and administration of heparin therapy for adult patients. It includes the assessment of the patient's fitness for treatment, the checking of the treatment drugs against the prescription and patient information, calculation of the amount needed to deliver the required dose, drug administration and the education of the patient with regard to benefits and side effects.
Indicative links to KSF Dimension and Level	<i>Health and wellbeing HWB7:</i> Interventions and treatments <i>Level 3:</i> Plan, deliver and evaluate interventions and/or treatments
Origin	This is a new workforce competence proposed and developed by the National Patient Safety Agency.
Activity scope	<p>Key words and concepts:</p> <p><i>Unfractionated heparin (UFH)</i> Naturally occurring anticoagulant extracted from porcine or bovine mucosa. Comprises a mixture of compounds of different molecular weights. Injectable anticoagulant.</p> <p><i>Low molecular weight heparin (LMWH)</i> Low molecular weight fractions of heparin. Longer-acting than UFH. Injectable anticoagulant.</p> <p><i>Danaparoid</i> Heparinoid. Injectable anticoagulant.</p> <p><i>Fondaparinux</i> Synthetic pentasaccharide Factor Xa inhibitor. Similar in action to LMWHs. Injectable anticoagulant.</p> <p><i>Hirudins</i> Synthetic, recombinant thrombin inhibitors. Injectable anticoagulant.</p>

	<p>This workforce competence covers the preparation and administration of injectable anticoagulant therapy for adult patients. It covers the use of heparins, danaparoid, fondaparinux and hirudins for both prophylaxis and treatment. It does not cover the use of heparins and related products in the outpatient treatment of DVT or the prevention of clotting in extra-corporeal circuits.</p>
Performance criteria	<p>You need to:</p> <ol style="list-style-type: none"> 1. Read the patient's notes, prescription and relevant regimen protocol and identify any special instructions, investigations (including abnormal blood test results), or issues for which you need to seek advice. 2. Greet and accurately identify the patient. 3. Introduce yourself and any colleagues involved in the procedure to the patient and/or carer. 4. Assess the patient's physical condition and their fitness for treatment and seek advice from an appropriate team member if required. 5. Check the drugs against the treatment plan, prescription and patient information with regard to: <ul style="list-style-type: none"> • patient's identification on prescription chart and on labelled drugs • critical test results (including blood results) • regimen and individual drug identification • name of drug • the drug's fitness for administration (assessed by appearance and condition) • diluents and dilution volumes • dose • administration route and duration • expiry date/time of the drug. 6. Explain the treatment and potential side effects and their management to the patient and/or carer, and accurately answer any questions at a level and pace that is appropriate to: <ul style="list-style-type: none"> • their emotional state • their level of understanding • their culture and background • their preferred ways of communicating • their needs. 7. Check that the patient and/or carer understand the treatment to be given and any potential side effects together with their management. 8. Undertake a final check of the treatment drug against the

	<p>prescription and the patient's identity before administration.</p> <ol style="list-style-type: none"> 9. Prepare the dose, carrying out calculations, dilutions etc in accordance with local policy. 10. Give the required drug via the prescribed route, at the prescribed rate according to local medicines administration guidelines, local control of infection and COSHH guidelines. 11. Record the administration in the patient's notes, prescription chart and patient held records, as appropriate, according to local guidelines. 12. Dispose of waste materials (sharps etc) in accordance with local guidelines. 13. Communicate with appropriate professional colleagues as required by local guidelines. 14. Recognise when you need help and seek advice and support from an appropriate source when the needs of the individual and the complexity of the case are beyond your competence and capability.
Knowledge and understanding	<p>You need to apply:</p> <p><i>Legislation, regulations and guidelines</i></p> <ol style="list-style-type: none"> 1. An in-depth understanding of national* and local anticoagulant guidelines and their application. 2. A working understanding of the local guidelines for patient records, their storage and confidentiality of information. 3. An in-depth understanding of the national and local prescribing guidelines. 4. A working understanding of the Guidelines on the Administration of Medicines. 5. A working understanding of local guidelines for waste and sharps handling and disposal. 6. A working understanding of risk management, patient safety principles and causes of medication errors. <p><i>Clinical knowledge</i></p> <ol style="list-style-type: none"> 7. A working understanding of the disease progression and the potential impact on physiological systems. 8. A working understanding of the relevance of other treatment modalities and clinical conditions. 9. An in-depth understanding of diagnosis, care plan, protocol and guidelines. 10. An in-depth understanding of the principles and practice of

	<p>prescribing injectable anticoagulants.</p> <ol style="list-style-type: none"> 11. An in-depth understanding of the indications and contra-indications for injectable anticoagulants. 12. An in-depth understanding of drug calculations appropriate to the prescribed injectable anticoagulant, dose dilution and length of delivery. 13. An in-depth understanding of the side effects of injectable anticoagulant medicines, and their assessment, monitoring, prevention and management. <p><i>Technical knowledge</i></p> <ol style="list-style-type: none"> 14. A working understanding of different venous access devices and their care. 15. A working understanding of administration by the subcutaneous route, and intravenous bolus and/or infusions. <p><i>Procedures and patient management</i></p> <ol style="list-style-type: none"> 16. A factual knowledge of the roles and responsibilities of other team members. 17. A working understanding of the limits of one's own knowledge and experience and the importance of not operating beyond these.
*National guidance	<p>Guidance produced nationally includes:</p> <p>Baglin T et al. Guidelines on oral anticoagulation (warfarin): third edition - 2005 update. <i>British Journal of Haematology</i>. 2005; 132: 277-285. Available at: www.bcsbguidelines.com</p> <p>National Patient Safety Agency. <i>Patient Safety Alert – Actions that can make anticoagulant therapy safer</i>. (2007). Available at: www.npsa.nhs.uk/health/alerts</p> <p>British National Formulary. 52nd and subsequent editions.</p>

ANTICOAGULANT COMPETENCE 6:

Reviewing the safety and effectiveness of an anticoagulant service

Summary	This proposed workforce competence is directly applicable to those responsible for reviewing and evaluating the safety and effectiveness of an anticoagulant service. This involves developing systems to monitor both the technical efficiency of the service and the extent to which risks to patients are minimised.
Indicative links to KSF Dimension and Level	Core 5: Quality Level 4: Develop a culture that improves quality
Origin	This is a new workforce competence proposed and developed by the

	National Patient Safety Agency (NPSA).
Performance criteria	<p>You need to:</p> <p><i>Determine the method of review and evaluation</i></p> <ol style="list-style-type: none"> 1. Identify the main objectives and outcomes of the service. 2. Identify the purpose, range and level of the evaluation. 3. Choose appropriate ways of evaluating the safety and effectiveness of the service, in accordance with local and national guidelines* (e.g., BCSH and NPSA anticoagulant service safety indicators and NPSA template audit form). 4. Specify the evaluation criteria for outcomes and delivery. 5. Confirm that the resources are available to carry out the evaluation. 6. Agree with the appropriate people how the evaluation will be carried out. 7. Specify a plan for putting the evaluation into practice. <p><i>Perform the review</i></p> <ol style="list-style-type: none"> 8. Identify the information needed to evaluate the service. 9. Collect relevant information using suitable methods and procedures. 10. Produce samples that are sufficiently representative to give reliable results. Ask questions that are clear. 11. Ensure that the evaluation causes as little disruption as possible to the delivery of the service. 12. Ensure that staff involved understand why the evaluation is being carried out and encourage them to give their views. 13. Record information accurately and follow the rules of confidentiality. 14. Report the results of the evaluation in a consistent and comprehensible way. 15. Communicate results of the evaluation in a timely manner to managers and staff and external QA bodies. <p><i>Make improvements to the service</i></p> <ol style="list-style-type: none"> 16. Set out the objectives that will be achieved by making improvements. 17. Discuss how practical the proposed improvements are with staff and managers.

	<ol style="list-style-type: none"> 18. Prioritise improvements according to their cost and benefit. 19. Identify the resources needed to make improvements to the service. 20. Ensure that plans to make improvements are practical and realistic. 21. Speak to the people who will put the plans into practice and take account of their views in the final plan. 22. Give the people affected by the plan clear information about the changes and the opportunity to ask for explanations on anything they do not understand. 23. Identify and deal with obstacles and problems when putting the plans into practice and report them to the appropriate people. 24. Collect enough information to monitor how successful the plans are.
Knowledge and understanding	<p>You need to apply:</p> <p><i>Legislation, regulations and guidelines</i></p> <ol style="list-style-type: none"> 1. An understanding of national and local anticoagulant guidelines and their application. 2. A working understanding of the local guidelines for patient records, their storage and confidentiality of information. 3. An understanding of the national and local prescribing guidelines. 4. A understanding of the Guidelines on the Administration of Medicines. 5. A working understanding of risk management and patient safety principles and causes of medication errors. <p><i>Clinical knowledge</i></p> <ol style="list-style-type: none"> 6. An understanding of the principles and practice of prescribing anticoagulants. 7. An understanding of the indications for and contraindications to anticoagulant treatment. 8. An in-depth understanding of the ways of monitoring safety and effectiveness of anticoagulant services. 9. A working understanding of relevant peer reviewed literature. <p><i>Technical knowledge</i></p> <ol style="list-style-type: none"> 10. A understanding of different near-patient testing devices and their care and maintenance requirements. 11. A knowledge of laboratory methods for measurement of clotting

	<p>parameters.</p> <p>12. A working knowledge of local computerised patient record systems, laboratory IT systems and pharmacy IT systems.</p> <p><i>Procedures and patient management</i></p> <p>13. An in-depth understanding of local patient care pathways.</p> <p>14. A factual knowledge of the roles and responsibilities of other team members.</p> <p>15. A working understanding of the limits of one's own knowledge and experience and the importance of not operating beyond these.</p>
*National guidance	<p>Guidance produced nationally includes:</p> <p>Baglin T et al. Guidelines on oral anticoagulation (warfarin): third edition - 2005 update. <i>British Journal of Haematology</i> 2005; 132: 277-285. Available at: www.bcsghguidelines.com</p> <p>National Patient Safety Agency. <i>Patient safety alert – Actions that can make anticoagulant therapy safer</i>. Audit checklist (2007). Available at: www.npsa.nhs.uk/health/alerts</p> <p>National Patient Safety Agency. <i>Patient Safety Alert – Actions that can make anticoagulant therapy safer</i>. (2007). Available at: www.npsa.nhs.uk/health/alerts</p> <p>British National Formulary. 52nd and subsequent editions</p>