

SUB-SPECIALTY TRAINING CURRICULUM

FOR

STROKE MEDICINE

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Joint Royal Colleges of Physicians Training Board

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1 Introduction

Stroke is the commonest cause of death and disability in the UK, and accounts for over 5% of NHS resources. Given the ageing population, stroke incidence is likely to increase. The Department of Health, Stroke Strategy published in 2007 and other publications prior to that, the NSF on Stroke (included within the Framework for Older People), NHS Quality Improvement Scotland, Stroke Services and the Royal College of Physicians (RCP) and SIGN Stroke Guidelines have set clear and explicit standards of care for all people suffering from the effects of stroke illness. Although stroke is included in the NSF for older people, up to a quarter of strokes occur in younger patients who may have different needs. Stroke encompasses elements of neurology, cardiovascular disease, general and geriatric medicine and rehabilitation. All patients with stroke should receive specialist care in acute and rehabilitation stroke units or a neurovascular clinic. Consultants with specialist training in stroke are required to lead and contribute to providing specialist Stroke services throughout the UK. The RCP National Sentinel Audit for Stroke continues to demonstrate that expert stroke care is poor in many health districts. This programme has been developed to provide physicians training in the relevant medical specialties with additional expertise in Stroke Medicine. After satisfactory completion of sub-specialty training in Stroke Medicine, trainees will be eligible to have the Sub-Specialty of Stroke Medicine included in their entry in the GMC's Specialist Register alongside the award of a CCT in their main specialty.

The primary purpose of a Stroke physician is to contribute to the provision of skilled acute and rehabilitation care to patients with stroke as part of a multidisciplinary Stroke Service. Early specialist management, comprising both general and specific therapy, can influence morbidity and mortality with better recovery and survival after care in a specialist unit compared to a general ward. Knowledge and skills in stroke prevention are required. Stroke physicians may also take a key role in the development of hospital and community stroke services. The detailed role of a Stroke physician will vary depending on the type of service within which they are practising. For example, a neurologist trained in Stroke Medicine might wish to contribute to the provision of an acute Stroke Service and a TIA clinic, whereas a geriatrician might be more interested in contributing to care on a rehabilitation stroke unit, while another might wish to contribute to the whole service. The training programme recognises this, but expects all Stroke specialists to have core knowledge and skills in all areas of diagnosis, investigation and treatment relevant to the care of stroke patients. Furthermore, Stroke physicians will require skills in service development, team working, teaching, critical appraisal and service evaluation. They should be familiar with stroke research methods and keep up to date with relevant research findings.

Stroke physicians work closely with a wide range of other medical specialists, including Neuroradiologists, Neurosurgeons, Primary Care Physicians and colleagues in Neurology, Geriatric Medicine and Neurorehabilitation. They also work closely with members of the multidisciplinary Stroke team, including specialist nurses, physiotherapists, occupational therapists, psychologists and social workers. Good relationships with managerial staff are required to develop and maintain stroke services.

2 Rationale

The primary purpose of specialist training in Stroke Medicine is to promote the development of physicians with the knowledge, skills and attitudes to function as an expert consultant resource within specialist stroke services. The background specialty of such clinicians is

considered to be less important than the possession of those competencies needed to contribute to a specialist stroke service. This programme does not seek to replace or compete with a main specialty training programme but to build upon competencies gained in that specialty in an integrated approach to ensure that individuals seeking to specialise in Stroke Medicine acquire the requisite training to meet the above aims. At the completion of specialist stroke training, physicians should have acquired:

- The ability to apply knowledge and skills in diagnosis and management to ensure safe and independent expert practice as a consultant specialist in Stroke Medicine;
- The ability to establish a differential diagnosis in the context of stroke presentations to ensure safe and appropriate management of acute stroke and non-stroke illness.
- The competencies to develop management plans for people living with stroke illness including treatment, rehabilitation, health promotion, secondary prevention and long-term support;
- The attitudes and communication skills to contribute to and work effectively in a comprehensive multidisciplinary stroke service in hospital and/or the community and to work closely with other relevant agencies;
- The abilities to advise, develop and evaluate district stroke services in partnership with local health and social care communities.

2.1 Purpose of the Curriculum

The curriculum is designed for trainees who have been accepted into specialist training, usually Geriatric Medicine or Neurology, with the aim of adding to the training gained in that specialty, additional skills and experience appropriate to the specialist practice of Stroke Medicine. The curriculum defines the training requirements, the programme objectives, the contents of training, and the requirements for supervision, assessment and appraisal. Trainees who successfully achieve the required competencies and skills within this curriculum will have their sub specialty recognition recorded on the specialist register along with the CCT in their main specialty.

2.2 Development

This curriculum was developed by the Sub -Specialty Advisory Committee for Stroke Medicine under the direction of the Joint Royal Colleges of Physicians Training Board (JRCPTB). It replaces the previous version of the curriculum dated May 2007, with changes to ensure the curriculum meets GMC's standards for Curricula and Assessment, and to incorporate revisions to the content and delivery of the training programme. Major changes from the previous curriculum include an integrated approach to sub-specialty training with the trainees' main specialty for components of Stroke training together with the inclusion of generic, leadership and health inequalities competencies.

The curriculum was originally proposed by the British Association of Stroke Physicians after consultation with its membership, which included trainees and experienced trainees from Neurology and Geriatric Medicine. The final content of the curriculum and the teaching/learning methods described were then refined by the Sub-specialty Advisory Committee (SSAC) in Stroke Medicine. Regular meetings were held by the SSAC involving all relevant stakeholders including SACs of Geriatric Medicine and Neurology. The curriculum was also informed by feedback obtained from a presentation, exhibition stand and questionnaire circulated at the UK Stroke Forum, which is attended by trainees, consultants in Stroke Medicine nurses, therapists and other members of the multidisciplinary team as well as carers and patients. The membership of the SSAC includes teachers,

trainers and trainees in the sub-specialty and a Postgraduate Dean representative. In addition a representative from the national stroke charity, The Stroke Association, provides input from a patient, carer and service user perspective.

2.3 Entry Requirements

This programme is open to all trainees in the relevant specialties of medicine who hold MRCP (UK) or equivalent qualification and have been accepted as a specialist trainee in one of the recognised specialties i.e. they must be holders of a National Training Number (NTN). Trainees may come from specialty training posts in Geriatric Medicine, Neurology, Rehabilitation Medicine, Clinical Pharmacology and Therapeutics, Cardiology, General (Internal) Medicine or Acute Internal Medicine. This curriculum should therefore be read in conjunction with that of the main specialty. The curriculum is designed to ensure that practitioners possess not only core competencies but additional specialist competencies in the practice of Stroke Medicine, necessary to function either as a consultant in their chosen specialty with an interest in stroke or as a full-time stroke physician.

Training in Stroke Medicine will take place after entry to specialty training, which takes place after satisfactory completion of the core medical training curriculum which follows on from the Foundation curriculum. Stroke Medicine sub-specialty training may take place at any stage after appointment to the specialty training post, either on a full time basis or a time-equivalent modular basis. To achieve all the competencies at an appropriate level it is expected that 2 years experience orientated to the Stroke Medicine curriculum will be required, at least one of which will be at the level of advanced Stroke Medicine training, and will involve an attachment to a comprehensive stroke service including a hyperacute stroke unit, acute and longer term rehabilitation unit(s), and transient ischaemic attack/out-patient clinics. The greatest benefit would be achieved if this took place in penultimate year of specialty training so that the trainee can build on competencies which they may have already gained in their main specialty.

As training in Stroke Medicine is designed to be integrated with the main specialty, the opportunity for sub-specialty training in Stroke Medicine should be indicated to applicants for main specialty training at the time of appointment to a specialist training post in that specialty (ST3). The first year of Stroke Medicine training will then be incorporated into the main specialty training programme. The additional year of advanced Stroke Medicine training attached to a comprehensive stroke service would then be open to all NTN holders from the relevant specialties within a Deanery and managed on a competitive basis by advertisement within the Deanery. The two year programme would be prospectively approved in a co-ordinated approach between Training Programme Directors in main specialty and stroke.

Not all deaneries may be able to provide appropriate opportunities for Stroke Medicine training. Trainees who wish to undertake Stroke Medicine training outside the deanery where they are training in a main specialty should therefore be eligible to apply for the posts attached to comprehensive stroke service outside their main specialty programme and Deanery, to provide equal opportunities for stroke training. Thus some posts should be advertised nationally open to those with an NTN from the specified specialties.

Trainees should be able to express an interest in undertaking Stroke Medicine training at any time prior to the final year in which they are expected to be awarded a CCT, so long as they are able to then prospectively complete 2 years of sub-specialty Stroke Medicine training. In some cases, for example, if they are undertaking training outside their main training programme in another deanery, or they express an interest late in their training, this

may require them to extend their total training by 2 years devoted to Stroke Medicine, rather than the one year beyond that required for the main specialty.

2.4 Enrolment with JRCPTB

Trainees are required to register for specialist training with JRCPTB at the start of their training programmes. Enrolment in sub-specialty training in Stroke Medicine can take place at that stage or later when a trainee decides that is their preference – but must take place before final year or time equivalent of Stroke Medicine training. Enrolment with JRCPTB, including the complete payment of enrolment fees, is required before JRCPTB will be able to recommend trainees for a CCT. Trainees can enrol online at www.jrcptb.org.uk

2.5 Duration of Training

The duration of sub-specialty training in Stroke Medicine is determined by the time needed to complete the competencies specified in the programme contents section of this curriculum. However, the time needed to complete the experiential and learning aspects of the curriculum is a minimum of two years or time equivalent. For trainees enrolled in a specialty where there is already a substantial component of training relevant to stroke, specifically Geriatric Medicine and Neurology, and who have spent the equivalent of at least one year of training in training posts in which they have prospectively achieved competencies relevant to the Stroke Medicine curriculum, a minimum of one additional full year of advanced Stroke Medicine training attached to a comprehensive stroke service is still required. Trainees who pass their stroke sub-specialty assessment at the end of this year, will prolong their period of training by one year to achieve sub-specialty certification in the Stroke Medicine in addition to certification in their main specialty i.e. so long as it has been prospectively approved by the relevant SACs, the first year will double count towards both the main specialty and Stroke Medicine. Trainees from medical specialties who have not had exposure to prospectively approved training in Stroke Medicine and/or rehabilitation will require a minimum of an additional 2 years in stroke sub-specialty training to achieve sufficient experience and competencies in the curriculum.

2.6 Less Than Full Time Training (LTFT)

Trainees who are unable to work full-time are entitled to opt for less than full time training programmes. EC Directive 2005/36/EC requires that:

- LTFT shall meet the same requirements as full-time training, from which it will differ only in the possibility of limiting participation in medical activities.
- The competent authorities shall ensure that the competencies achieved and the quality of part-time training are not less than those of full-time trainees.

The above provisions must be adhered to. LTFT trainees should undertake a pro rata share of the out-of-hours duties (including on-call and other out-of-hours commitments) required of their full-time colleagues in the same programme and at the equivalent stage.

EC Directive 2005/36/EC states that there is no longer a minimum time requirement on training for LTFT trainees. In the past, less than full time trainees were required to work a minimum of 50% of full time. With competence-based training, in order to retain competence, in addition to acquiring new skills, less than full time trainees would still normally be expected to work a minimum of 50% of full time. If you are returning or

converting to training at less than full time please complete the LTFT application form on the JRCPTB website www.jrcptb.org.uk .

Funding for LTFT is from deaneries and these posts are not supernumerary. Ideally therefore 2 LTFT trainees should share one post to provide appropriate service cover.

Less than full time trainees should assume that their clinical training will be of a duration pro-rata with the time indicated/recommended, but this should be reviewed during annual appraisal by their TPD and chair of STC and Deanery Associate Dean for LTFT training. As long as the statutory European Minimum Training Time (if relevant), has been exceeded, then indicative training times as stated in curricula may be adjusted in line with the achievement of all stated competencies.

3 Content of Learning

3.1 Programme Content and Objectives

Trainees will be required to demonstrate their acquisition of the knowledge, skills and attitudes appropriate to the practice of Stroke Medicine in the fields of acute stroke management (including thrombolysis), stroke rehabilitation and stroke prevention. The objectives can be defined as follows:

1. Undertake a clinical assessment of a suspected stroke or TIA in an adult patient referred as an emergency to hospital or in an out-patient setting
2. Arrange and interpret appropriate investigations to support or exclude diagnosis of a suspected stroke or TIA and its cause
3. Manage hyperacute treatment for stroke TIA and common stroke mimics
4. Management of patients undergoing cerebral reperfusion therapies in acute ischaemic stroke
5. Manage immediate post-acute care of stroke
6. Provide end-of-life care for stroke patients
7. Manage secondary prevention strategies following stroke or TIA
8. Assess rehabilitation requirement for patient and initiate appropriate input from other members of the multidisciplinary team
9. Contribute to the on-going rehabilitation process by providing appropriate medical management to maintain patient fitness for rehabilitation
10. Provide leadership of a multidisciplinary team
11. Contribute to effective decision making for discharge planning
12. Contribute to post-discharge medical care, rehabilitation and longer term social and vocational integration
13. Provide effective communication and information to patients and carers throughout the journey of care.
14. Manage a patient with asymptomatic cerebrovascular disease or a family history of stroke
15. Undertake a clinical assessment of a patient with suspected vascular dementia and advice on appropriate management
16. Contribute to the development of a stroke service and provide leadership to such a service
17. Undertake teaching and training of stroke related topics for medical undergraduates, post-graduates and other healthcare professionals

18. Collaborate in research studies relating to stroke and other aspects of cerebrovascular disease

During the period of stroke training a trainee will be expected to further develop leadership skills, health inequalities and competencies which will also be encompassed within their main specialty training. Stroke specific competencies which are relevant to these aspects of training are defined in the syllabus and incorporated within the specialty specific content.

3.2 Good Medical Practice

In preparation for the introduction of licensing and revalidation, the General Medical Council has translated Good Medical Practice into a Framework for Appraisal and Assessment which provides a foundation for the development of the appraisal and assessment system for revalidation. The Framework can be accessed at http://www.gmc-uk.org/Framework_4_3.pdf_25396256.pdf

The Framework for Appraisal and Assessment covers the following domains:

- Domain 1 – Knowledge, Skills and Performance
- Domain 2 – Safety and Quality
- Domain 3 – Communication, Partnership and Teamwork
- Domain 4 – Maintaining Trust

The “GMP” column in the syllabus defines which of the 4 domains of the Good Medical Practice Framework for Appraisal and Assessment are addressed by each competency. Most parts of the syllabus relate to “Knowledge, Skills and Performance” but some parts will also relate to other domains.

3.3 Syllabus

In the tables below, the “Assessment Methods” shown are those that are appropriate as possible methods that could be used to assess each competency. It is not expected that all competencies will be assessed and that where they are assessed not every method will be used. See section 5.2 for more details.

STROKE MEDICINE SYLLABUS

1. To undertake a clinical assessment of a suspected stroke or TIA in an adult patient referred as an emergency to hospital or in an out-patient setting

Knowledge	Assessment Methods	GMP
Functional anatomy of the brain, spinal cord and peripheral nervous system	CbD	1
Anatomy and physiology of the blood supply and venous drainage of the brain and spinal cord	CbD	1
Pathology of cerebrovascular disease	CbD	1
Methods of assessing, including scoring systems, early risk of stroke recurrence	CbD	1
Presenting features of stroke, other vascular diseases of the brain and acute neurological disorders	CbD	1
Common and rare causes of stroke at all ages	CbD	1
Genetic causes of stroke	CbD	1
Clinical stroke classification schemes, e.g. OCSP and TOAST and their application in the research and clinical setting	CbD, mini-CEX	1
Conditions that mimic stroke in the context of systemic disease	mini-CEX	1
Conditions that stroke can mimic which may delay a diagnosis (“stroke chameleons”)	CbD, mini-CEX	1
Skills		
Ability to take a rapid and appropriately detailed neurological and cardiovascular history from patients, carers and bystanders	CbD, MSF	1,3
Ability to receive, assess and prioritise a referral received by telephone, in person or a written referral from a general practitioner or other health professional	CbD	1,2,3
Ability to manage acute stroke emergency admissions prioritising cases as appropriate and ensuring continuity of care in hand-over between shifts	ACAT	1,2,3
Ability to perform a rapid and appropriately detailed neurological examination and examination of other relevant systems	mini-CEX	1
Ability to formulate an appropriate differential diagnosis including stroke mimics	CbD, mini-CEX	1
Ability to identify likely pathophysiological mechanism and anatomical side of stroke based on history and examination	mini-CEX	1
Ability to conduct a bedside assessment of cognitive and communication function	mini-CEX	1
Ability to identify functional illness mimicking stroke	CbD, mini-CEX	1
Ability to perform the Glasgow Coma Score, NIH stroke score and other rating scales in stroke patients	mini-CEX	1
Behaviours		
To value the contribution of GPs and other health professionals and facilitate	MSF	3

the rapid access of emergency patients for acute assessment		
Tolerance of communication difficulties resulting from cognitive impairment, sensory impairment, language or other factors	mini-CEX, MSF	3
Ability to approach individuals identically, irrespective of gender, race, religion or age	MSF	4
Appreciation of the distress caused by stroke	CbD, MSF	3,4
Openness to alternative lifestyles	MSF	4
Sympathetic attitude to psychiatric and functional illness	CbD, MSF	1,3,4

2. To arrange and interpret appropriate investigations to support or exclude diagnosis of a suspected stroke or TIA and its cause		
Knowledge	Assessment Methods	GMP
Knowledge of risks of X-ray exposure and IRMER regulation relevant to patient safety	CbD	1,2
Principles and interpretation of brain and vascular imaging, including CT, MRI, perfusion imaging, cerebral angiography, carotid artery ultrasound, transcranial Doppler	CbD	1
Principles and interpretation of investigations relevant to stroke	CbD	1
Principles of diagnosis of diabetes, hyperlipidaemia and hypertension in the primary and secondary prevention of stroke	CbD	1
Investigation of secondary causes of hypertension	CbD	1
Investigation of familial causes of dyslipidaemia	CbD	1
Investigation of cardiogenic causes of stroke and their interpretation e.g. arrhythmia and structural disease of the heart	CbD, mini-CEX	1
Principles of autoimmune serology and testing for suspected vasculitis	CbD	1
Principles and utility of other neurological investigations e.g. EEG, CSF	CbD	1
Role of biomarkers in diagnosis of stroke	CbD	1
Investigation of conditions that mimic stroke and role of other specialties	CbD	1
Skills		
Ability to initiate appropriate investigations, taking into account the patient's age and clinical features and degree of urgency	CbD	1
Interpretation of CT, MRI, cerebral angiography, carotid ultrasound and other emergent techniques in suspected stroke and TIA patients	mini-CEX	1
Interpretation of abnormal haematology, biochemistry, clotting, thrombophilia and autonomic investigations	CbD	1
Interpretation of 12-lead ECG, 24 hour ECG and blood pressure monitoring recordings	CbD, mini-CEX	1
Ability to obtain consent from a patient for invasive investigations that would likely be performed by the trainee (e.g. lumbar puncture)	mini-CEX	1,2,3
Ability to explain results in lay language understood by the patient and carers	mini-CEX, MSF	1,3

Referral to appropriate specialties when required	CbD	2,3
Behaviours		
Appreciation of the urgency of imaging and other investigations in acute stroke	CbD	1,2
Communication of rationale for (urgent) investigations to appropriate team	MSF	1,3
Appreciation of the pressures on investigatory departments	CbD, MSF	1,3
Sensitivity to the anxieties of patients and carers	MSF	3,4
Appreciation of patient's right to refuse investigation	MSF	3,4

3. To manage hyperacute treatment for stroke TIA and common stroke mimics		
Knowledge	Assessment Methods	GMP
Physiology of cerebral blood flow regulation and Physiology of oxygen transport	CbD	1
Pathophysiology of blood pressure and autonomic function control	CbD	1
Pathophysiology of cerebral infarction and haemorrhage	CbD	1
Pathophysiology of platelets, clotting mechanisms and endothelial function	CbD	1
Action and side effects of drugs used in management of stroke and TIA	CbD	1,2
Potential indication of other interventional treatments (e.g. intra-arterial thrombolysis, mechanical embolectomy)	CbD	1,2
Indications, contraindications and management of intravenous thrombolysis and other interventional treatments in acute stroke	CbD	1,2
Neuroprotective strategies	CbD	1
Methods of non-invasive physiological monitoring	CbD	1
Indications for neurosurgery in cerebral haemorrhage and cerebral infarction	CbD	1
Presenting features, diagnosis and treatment of cerebral aneurysms and arteriovenous malformations	CbD, mini-CEX	1
Role of MDT in detailed assessment of patient	CbD	1
Management of thrombolysis and other interventional treatments	CbD, mini-CEX	1
Management of stroke and TIA in pregnancy	CbD	1
Management of cerebral venous thrombosis	CbD	1
Causes of deterioration in acute stroke	CbD	1
Indications for respiratory and cardiac support	CbD	1
The evidence base to justify acute stroke treatments, including randomised trials, completed and ongoing, and the Cochrane Stroke Database	CbD	1
Relevant sections of the National Service Framework, NICE appraisals, the National Clinical Guidelines for Stroke, and the National Stroke Strategy, as applied locally and more widely in the UK	CbD	1
Understand that consent is a process that may culminate in, but is not	CbD	1

limited to, the completion of a consent form		
Knowledge of strategies to break bad news	CbD	1
Skills		
Selection of appropriate patients and safe administration of intravenous thrombolysis and other interventions including appropriate consent and supervision of post treatment management, including complications	CbD, mini-CEX	1,2
Assessment of swallowing	mini-CEX	1,2
Interpretation and management of the changes in physiological variables, including hypoxaemia, abnormal cardiac rhythms, hypotension, hypertension, hypoglycaemia and hyperglycaemia	CbD	1
Assessment and management of fluid balance	mini-CEX	1
Interpretation and management of the changes in physiological variables, including hypoxia, abnormal cardiac rhythms, hypotension, hypertension, hypoglycaemia and hyperglycaemia	CbD	1
Ability to formulate appropriate strategies for prevention of Deep Vein Thrombosis (DVT) and early stroke recurrence	CbD, mini-CEX	1,2
Interpretation of neurological observation charts	mini-CEX	1
Appropriate referrals to neurosurgery and interventional neuroradiology	CbD	1,3
Ability to involve and co-ordinate the multidisciplinary team	CbD	1,3
Appropriate referrals to ICU	CbD	1,3
Ability to impart bad news in the context of stroke disease	mini-CEX	1,3
Ability to obtain consent from patients and assent from carers to treatments undertaken by the trainees	mini-CEX	1,3
Recognition of and use of appropriate end of life pathways	CbD	1,3
Behaviours		
Keeps up to date with advances in treatment	CbD, MSF	1,2
Provide leadership to junior members of the medical team and ensure appropriate communication between all members of the team	MSF	1,2,3
Show willingness to seek advanced directives and discuss their relevance in relation to severity of stroke	CbD	1,3,4
Respects wishes of patients and carers regarding treatment and end of life decisions even in situations where this may not be best medical treatment	CbD, MSF	3,4
Take leadership in breaking bad news	CbD, MSF	1,3
Respect the different ways people react to bad news	mini-CEX, MSF	1,3
To develop the attributes of someone who is trusted to be able to manage complex human, legal and ethical problems	CbD	3

4. Management of patients undergoing cerebral reperfusion therapies in acute ischaemic stroke

Knowledge	Assessment Methods	GMP
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Awareness of the evidence base and registry data for intravenous thrombolysis in ischaemic stroke	CbD	1
Awareness of national guidelines (e.g. NICE TA122) for intravenous thrombolysis	CbD	1
Familiarity with local guidelines and protocols (on an approved training programme)	CbD	1,2
Awareness of indications and contraindications for treatment	CbD, mini-CEX	1,2
Understanding of the role of other interventional treatments for acute ischaemic stroke (e.g. clot retrieval) in relation to intravenous thrombolysis	CbD	1
Understanding that severe neurological deficit and CT detection of early infarction are associated with adverse outcomes including bleeding risk	CbD	1,2
Knowledge of thrombolysis side effects (e.g. intra / extra cranial bleeding, anaphylaxis) and their specific management	CbD	1,2
Skills		
Application of evidence base for thrombolysis to individual patient cases	CbD	1,2
Taking of a focussed history (with corroboration if required) including symptom time of onset and identifies if symptoms have changed	CbD, mini-CEX	1
Undertaking of a detailed clinical examination relevant and perform NIHSS	mini-CEX	1
Evaluating capillary sugar value	CbD, mini-CEX	1,2
Arrangement of timely appropriate neuroimaging and interpretation (with radiologist or stroke physician input where required)	mini-CEX	1
Ability to undertake a discussion about benefits and risk of treatment to patients and/ or care givers	CbD, mini-CEX	1,3,4
Ability to calculate <i>alteplase</i> dose in mg/kg as both bolus and infusion over 60 minutes	mini-CEX	1
Ability to demonstrate use of the infusion pump for bolus and infusion	mini-CEX	1
Ability to recognise complications of thrombolysis including neurological deterioration, signs of angioedema and shock and can initiate a treatment plan for each	CbD, mini-CEX	1,2
Ability to provide a clear post thrombolysis management plan including which observations, investigations and their timing	CbD, Mini-CE	1,2
Safe handover of patient to relevant medical and/or nursing staff	mini-CEX	1,2,3
Ability to effectively and empathetically communicate when thrombolysis is not indicated / contraindicated following assessment	mini-CEX	1,3,4
Behaviours		
Keeps up to date with advances in treatment, research and changes to guidelines	CbD, MSF	1,2
Demonstrates safe decision making and practice relevant to treatment decision	mini-CEX, MSF	1,2
Seeks the help of a second / senior opinion where decisions are not clear	CbD, mini-CEX	2,3
Provides leadership to other members of the treating team	mini-CEX, MSF	1

Respects the wishes of patients and carers regarding treatment (including end of life decisions) even in situations where this may not be the best medical treatment	CbD, MSF, PS	4,3
Respects the different way in which people react to bad news	CbD, MSF	3,4
Demonstrates leadership in decision making and communication	mini-CEX, MSF	1,3

5. To manage immediate post-acute care of stroke		
Knowledge	Assessment Methods	GMP
Principles of multidisciplinary team care relating to the acute stroke patient, including positioning, fluid balance, nutrition, bowel and bladder care, pressure area care and manual handling	CbD, MSF	1
The impact of stroke on neural control of swallowing and factors influencing its recovery	CbD	1
Methods of assessment of hydration and nutrition and formulating a judgement on appropriate support for individual patients	CbD, mini-CEX	1
Principles of managing fluid and nutritional replacement including parenteral feeding	CbD	1
Control of bladder and bowel function, assessment of the effects of stroke on continence, and team approach to management	CbD	1,3
Methods to prevent thrombo-embolic disease according to individual patient characteristics	CbD	1
Appropriate timing and methods of initial mobilisation	CbD	1
Features of focal and generalised cognitive disorder and impact on management and prognosis	CbD	1
Prevention, management and monitoring of hospital acquired infections	CbD	1,3
Ethical and legal issues relating to the management of stroke	CbD	3,4
Mental capacity and consent issues and assessment processes for patient with cognitive impairment following stroke	CbD, MSF	3,4
Skills		
Provision of and response to monitoring of patients in the stroke unit setting	CbD, mini-CEX	1,3
Provision of general medical care including regular review of medication for patients admitted with stroke recognising potential drug interactions and advising patients about potential adverse effects	CbD, mini-CEX	1
Recognising and managing cardiorespiratory and other non-neurological complications following recent stroke	CbD, mini-CEX	1
Appropriate use of antibiotics to minimise risk of hospital acquired infection	CbD, mini-CEX	1
Assessment and management of nutrition/hydration for individual patients within a multidisciplinary team	CbD, MSF	1,3
Identification and management of the confused patient	mini-CEX	1
Identification and management of neuro-psychiatric consequences of stroke, including depression	mini-CEX	1

Appropriate timing and content of communication with patients and families	mini-CEX, MSF, PS	3,4
Appropriate timing and content of communication with all members of the multidisciplinary team	mini-CEX, MSF	3
Behaviours		
Values patient and carers views on treatment decisions	CbD, PS	4
Values input from multidisciplinary team towards making treatment decisions	MSF	3
Is aware of cultural and religious issues relevant to stroke	MSF, PS	4
Reflect upon ethical perspectives and relevance of mental capacity status during management decisions and communication	MSF	3,4

6. To provide appropriate end-of-life care for stroke patients		
Knowledge	Assessment Methods	GMP
Determinants of prognosis after stroke and the potential impact of additional co-morbidities	CbD, mini-CEX	1
How principles of palliation relate to the complications of stroke and the care provided by multidisciplinary stroke teams	CbD	1
Causes and mechanisms of deterioration and death after stroke	CbD	1
Outline the role of hospital, community palliative care teams and hospice services in relation to stroke patients needs	CbD, mini-CEX	1,3
Know that a referral to specialist palliative care is appropriate for patients with stroke disease	CbD, mini-CEX	1,3
Understand the role of the second medical opinion in decisions about withdrawal of active treatment including medication and / or artificial nutrition and hydration in end of life decisions in stroke disease	CbD	1,2,3,4
Skills		
Use of palliative care models in stroke care settings	CbD	1
Assessment of individual prognostic factors and the wishes of each patient during a decision to take a palliative approach following stroke	CbD, mini-CEX	1,4
Conduct of appropriate discussions with patients, carers and the multidisciplinary team concerning Do not resuscitate (DNR) orders and withdrawal of medication and/or feeding in end-of-life situations	CbD, mini-CEX	1,3
Referral to palliative care teams when appropriate	CbD	1
Conduct of appropriate discussions with patients, carers and the multidisciplinary team concerning do not attempt cardiopulmonary resuscitation (DNA-CPR) orders and withdrawal of medication and/or feeding in end-of-life situations	CbD, mini-CEX	1,3
Behaviours		
Demonstrates awareness of stroke related influences upon end of life decisions e.g. understanding patient wishes in the presence of dysphasia	CbD, MSF	3

and cognitive impairment		
Recognises of ethical and medico-legal guidance for issues especially relevant to palliation after stroke e.g. discontinuation of hydration and supported nutrition	CbD, MSF	4
Demonstrates active management and ongoing assessment of symptoms in stroke patients undergoing palliative care	CbD, mini-CEX	1
Recognises when care is complex and refers to specialist palliative care	CbD, mini-CEX	1,2,3

7. To manage primary and secondary prevention strategies following stroke or TIA		
Knowledge	Assessment Methods	GMP
Understand the influence of lifestyle on the incidence of stroke and factors that may influence the individual to change their lifestyle	CbD	1
Quantification of early and subsequent predicted risk of recurrence and knowledge of relative and absolute risk reduction resulting from specific interventions of treatments	CbD	1
Awareness of evidence base for secondary prevention, current trial data and ability to critically appraise and understand how to apply them to clinical practice	CbD	1,2
Knowledge of the content and variety of guidelines relevant to secondary prevention	CbD	1
Understanding the structure of service models which support rapid introduction of secondary prevention at various sties of presentation including A&E departments, GP referrals, and inpatients on general wards	CbD	1
Optimum management of hypertension, diabetes and lipid levels to maximise secondary prevention and impact of lifestyle approaches to this reduction	CbD	1
Indications for cerebral revascularisation including endarterectomy, stenting and bypass surgery	CbD	1
Awareness and understanding of obesity as a significant medical condition and its relationship with stroke and other medical conditions related to stroke (e.g. sleep disorders)	CbD	1
Skills		
Appropriate selection of secondary prevention strategies for Stroke and TIAs, including involvement of other specialists, medications or lifestyle changes	mini-CEX	1
Ability to effectively and clearly communicate and explain to patients the reasons for secondary prevention in terms they understand so that compliance is improved	mini-CEX	1
Communication of risk-benefit issues involved in secondary prevention. Ability to communicate clearly the absolute risk reduction of a treatment as well as risks or potential side effects of treatment	CbD, mini-CEX	1
Behaviours		
Non-judgmental attitude to lifestyle or choices about secondary prevention therapy	mini-CEX	3,4

Positive proactive discussion with patients to explain treatments, lifestyle changes and other actions which will positively improve health (e.g. smoking cessation) which encourages them to ask questions and participate in self-management	mini-CEX	3,4
Awareness of age, gender and ethnic diversity issues in relation to compliance, perceptions or attitude to the benefits of secondary prevention	mini-CEX	3,4
To promote the medical importance of weight loss in obesity and its maintenance	mini-CEX	3,4

8. To assess rehabilitation requirement for patient and initiate appropriate input from other members of the MDT

Knowledge	Assessment Methods	GMP
Patterns of recovery relevant to stroke types	CbD	1
Factors associated with either a good or a poor functional prognosis.	CbD	1
Impact of co-morbidities on rehabilitation	CbD	1
Roles of other members of multidisciplinary rehabilitation team	CbD, mini-CEX, MSF	1,3
Range of rehabilitation resources appropriate for stroke care e.g. early supported discharge, specialist stroke unit, physical disability	CbD	1,3
Neglect syndromes	CbD, mini-CEX	1,3
Aphasia and other communication disorders	CbD, mini-CEX	1,3
Swallowing problems and their management	CbD, mini-CEX	1,3
Theories of memory and amnesia	CbD	1
Theoretical basis of rehabilitation strategies and recognition of different therapeutic approaches, e.g. BOBATH	CbD	1
Use of mechanical devices to restore independent mobility and function, e.g. orthotic devices, wheelchairs	CbD	1
International classification of function and differentiation	CbD	1
Principles of early rehabilitation	CbD	1,3
Awareness that patient partnership is important during rehabilitation	CbD	3
Skills		
Undertake appropriate assessment to determine rehabilitation needs	CbD, mini-CEX	1,3
Neurological assessment of focal cognitive impairment	CbD, mini-CEX	1
Communicate outcome of assessment to patient and relatives	mini-CEX, PS, MSF	1,3,4
Identify appropriate rehabilitation team members	CbD, mini-CEX, MSF	1,3
Use and scoring of functional rating scales (Barthel, Rankin, FIMS)	CbD	1,3
Neurological examination and measurement of power, tone and joint ranges in the rehabilitation context	mini-CEX	1,3

Examination of sensory deficits at the bedside including inattention, visual field loss	mini-CEX	1,3
Examination of cognition and communication skills in the rehabilitation context	mini-CEX	1,3
Examination of gait, including when to refer for gait analysis, and when to refer for orthotic devices and wheelchair	mini-CEX	1,3
Behaviours		
No age, gender or ethnic discrimination in decision making	MSF, PS	3,4
Open and honest discussion	MSF, PS	3,4

9. To contribute to the on-going rehabilitation process by providing appropriate medical management to maintain patient fitness for rehabilitation

Knowledge	Assessment Methods	GMP
Impact of factors associated with stroke related physical impairment including cognitive, sensory, and language impairments	CbD	1
Management of spasticity associated with stroke	CbD, mini-CEX	1,3
Causes of pain in individuals with stroke including diagnosis and management of shoulder problems and neuropathic pain	CbD	1,3
Anatomy and physiology of gait cycle and measures used to improve gait	CbD	1,3
Anatomy and physiology of bladder and bowel dysfunction and knowledge of management of frequent complications	CbD	1,3
Structure and function of the shoulder girdle and genesis of shoulder dysfunction after stroke	CbD	1
Pain pathways, mechanisms and side effects of analgesia, and non-pharmacological management of pain	CbD	1,3
Diagnosis and management of the common complications of stroke, e.g. anxiety, depression, which can affect rehabilitation	CbD, mini-CEX	1,3
Skills		
Identification and management of common problems associated with immobility including deep venous thrombosis and pressure ulcers	CbD	1,2,3
Identification and management of behavioural problems associated with cognitive problems	CbD	1,2,3,4
Identification and management of common medical problems arising in patients during rehabilitation	CbD	1,3
Intra articular injection of the shoulder, indications and practical use	mini-CEX	1,2,3
Botulinum toxin injections in areas which commonly cause problems e.g. upper limb and calf complex	mini-CEX	1,2,3
Application of integrated care pathways	AA, CbD	3
Practical knowledge of how to communicate with patients and their families about medical issues and to enhance their knowledge including secondary prevention drugs, and side effects	mini-CEX, MSF, PS	3,4

Behaviours

Ensure appropriate information is provided when a patient is transferred to another team or unit for rehabilitation after acute care	MSF	1,2,3
Demonstrating positive attitude to helping individuals maximise their physical potential in the face of ongoing disability	MSF, PS	3,4
Positive attitude to rapid identification and treatment of complications during rehabilitation	MSF	3
Helping patients and families to adapt to the impact of ill health following stroke and encourage them to understand their condition and self manage as far as possible	PS	3,4

10. To provide leadership of a multidisciplinary team

Knowledge	Assessment Methods	GMP
Training, skills and knowledge required in the specialties of other members of the stroke multidisciplinary team	CbD	1
Evidence base for multidisciplinary and interdisciplinary rehabilitation	CbD	1,3
Management structures and professional accountability of colleagues in other disciplines	CbD	1,3
Goal planning, goal setting, goal measurement and team audit	AA, mini-CEX	1,3,2
Relevant NSF standards for continuing conditions, knowledge of standards for rehabilitation	AA	1,2,3
Systems of measurement of outcome in rehabilitation	AA	1,2,3
Clinical governance pertaining to rehabilitation including risk management, audit, clinical incident reporting	AA	1,2,3
Principles of shared decision making and accountability	mini-CEX	1,2,3
Skills		
Multidisciplinary team working, goal setting after initial assessment	mini-CEX	1,2,3
Leadership of multidisciplinary team meeting	mini-CEX	1,2,3
Leadership of family meeting	mini-CEX	1,3,4
Leadership of discharge meeting	mini-CEX	1,3,4
Practical knowledge of conflict resolution between members of team	mini-CEX	1,2,3
Ability to delegate leadership to other responsible members of the team	mini-CEX	1,3
Behaviours		
Sense of respect for knowledge of other professionals	mini-CEX	3
Commitment to understand theoretical and philosophical bases of other professions	mini-CEX	3
Willingness to take responsibility for making decisions, based on high level of knowledge and competency not simply because of medical role	mini-CEX	2,3,4

11. To contribute to effective decision making for discharge planning

Knowledge	Assessment Methods	GMP
Resources available in the community and the criteria that determine selection of particular types of social care	CbD	1
Indications for community based and outpatient rehabilitation including the selection processes and range of facilities	CbD	1
The range and type of contribution which other health allied professionals and social workers provide to discharge planning including home visits, equipment provision, environmental control assessment and packages of care	CbD, mini-CEX	1
A working knowledge of the criteria and application process for NHS continuing care	CbD	1
Driving after stroke. Knowledge of the DVLA guidelines after stroke or TIA and responsibilities of stroke patients who drive. Awareness of what to tell patients and the processes available for returning to driving	CbD, mini-CEX	1,2
Knowledge of the impact of stroke on employment and the Disability Discrimination Act	CbD	1
Skills		
Assessment of suitability for discharge from hospital based on patients' level of mental and physical disabilities, social support and requirement for further rehabilitation	CbD, mini-CEX	1,2
Ability to determine a stroke patient's limits of physical activity and level of social participation	CbD	1,2
Understanding various measurements of outcome to determine their rate of progress and the timing of discharge. Ability to co-ordinate a multidisciplinary team (MDT) and the process of goal planning. Ability to monitor the MDT so that each discipline progresses systematically towards the discharge of patients	mini-CEX	3,4
Ability to resolve conflicts related to discharge arrangements between members of the MDT or between family members	mini-CEX	3,4
Timely communication with patients and their families about discharge arrangements, prognosis and long term medical management, including drug treatments	mini-CEX	3,4
Ability to chair a discharge planning meeting and resolve possible conflict	mini-CEX	3,4
Ability to assess a patient's mental 'capacity' to understand the full future implications of their discharge planning decisions and to take responsibility for their own discharge	mini-CEX	1,2,3,4
Behaviours		
Effectively take on the role of leadership in facilitating discharge and not leaving the responsibility of discharge planning to other disciplines	mini-CEX	3,4
Understanding the processes that lead to collective team goal setting and leading the team systematically towards an appropriate discharge	mini-CEX	1,3
Demonstrating a positive, supportive and problem-solving role to help individuals maximise their physical potential in the face of ongoing disability	mini-CEX	3,4

Helping patients and families to adapt to the impact of ill health following stroke and encourage them to understand their condition and achieve their full potential towards independence	mini-CEX	2,3,4
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12. To contribute to post-discharge medical care, rehabilitation and longer term social and vocational integration

Knowledge	Assessment Methods	GMP
Indications for appropriate referrals to outpatient therapy services including physiotherapy, occupational therapy, speech and language therapy services or multidisciplinary teams	CbD	1
Factors associated with a good or poor prognosis following discharge	CbD	1
Measurement of outcome and MDT goal planning as applied to outpatient services	CbD, mini-CEX	1
Complicating factors associated with physical impairment after stroke, including cognitive, sensory, and language impairments and how these may manifest more long term	CbD	1
Management of spasticity, neuropathic pain and other longer term impairments associated with stroke	CbD, mini-CEX	1,3
Contribution of other professions to community based rehabilitation, care and equipment provision and assessment of environment	CbD	3
Long term management of chronic medical problems defined in guidelines and NSFs	CbD	1
Understand that people can be denied employment opportunities unnecessarily through myths, stigma, dogma and insufficient advocacy and support	CbD	3
Explain the process of rehabilitation in the context of return to work and the role of other support services	CbD	1
Skills		
Ensure proper information transfer to allow the patient to safely be managed in the community e.g. prompt discharge letters	MSF	1,3
Assessment of suitability for post-discharge rehabilitation and when to finish an episode of rehabilitation	CbD, mini-CEX	1,3
Ability to communicate with patients and their families about practical and emotional issues arising from living with disability	mini-CEX, MSF	1,3,4
Ability to communicate with patients and their families about long term medical management including drug management, assessment of long term complications and side effects of drugs	CbD, MSF	1,3,4
Ability to recognise and manage longer term medical problems (e.g. depression) associated with stroke	CbD, mini-CEX	1,2
Ability to recognise and assess for deterioration and ability to form working diagnosis	CbD, mini-CEX	1,2
Ability to chair a community planning meeting	mini-CEX	3

Management of long term complications such as spasticity, neuropathic pain, seizures, depression	CbD, mini-CEX	1,2,3
Ability to assess the potential impact of work on the progress and recovery of a health condition	mini-CEX	1
Ability to identify key issues in assessing fitness for work, both before and during employment and on return to work following stroke	mini-CEX	1,3
Behaviours		
Acceptance and willingness to demonstrate leadership and responsibility in outpatient services, understanding processes and coordinating and supporting other disciplines and services for the care of the outpatient	MSF	1,2,3
Demonstrating positive attitude to helping individuals maximise their physical potential in the face of ongoing disability	MSF	3,4
Willingness to look beyond medical issues	MSF	3,4
Helping patients and families to adapt to the impact of ill health following stroke and encourage them to understand their condition and self manage as far as possible	MSF	1,3,4
Promotes and encourages involvement of patients in appropriate stroke support networks both to receive support and to give support to others	MSF	1,3
Recognise the benefits of employment on health and wellbeing, and the negative effects of no work and consider the impact of physical and psycho-social factors on work capability	CbD	1
Recognise that a patient's return to work will depend on their level of fitness and the nature of their work	CbD, MSF	1
Recognise the importance of listening to the patient's views, aspirations and fears in relation to their working roles following stroke	PS	1,3,4

13. To provide effective communication and information to patients and carers throughout the journey of care

Knowledge	Assessment Methods	GMP
Principles of breaking bad news	CbD, mini-CEX	1,3
Principles of oral and written information including partnership with patients in development	CbD	1,3
Availability of pamphlets which may aid understanding	CbD, mini-CEX	1,3
Skills		
Effective communication with patients and carers	ACAT, mini-CEX	1,3
Involvement of patients and carers at every stage of decision making	CbD, mini-CEX	1,3
Recognition of resources to support patients and carers	CbD, mini-CEX	1,2
Provide effective patient and carer education with support of the multidisciplinary team	mini-CEX	1,2,3
Behaviours		
Recognition of patients and carers needs for information	mini-CEX	1,2
Appropriate manner	mini-CEX	1,2,3
Availability to patients and carers	mini-CEX	1
Value and appropriately enlist contributions from other team members to communication e.g. nurses	mini-CEX	3

14. To manage a patient with asymptomatic cerebrovascular disease or a family history of stroke

Knowledge	Assessment Methods	GMP
Range of normal and abnormal CT and MRI brain imaging	mini-CEX	1
Implications of asymptomatic cerebral infarction and haemorrhage	CbD	1
Classification and differential diagnosis of leukoaraiosis and small vessel disease	CbD	1
Genetic disorders affecting cerebral vasculature, presentation and prognosis	CbD	1
Classification and prognosis of asymptomatic cerebral aneurysms	CbD	1
Classification and prognosis of asymptomatic arteriovenous malformations	CbD	1
Skills		
Ability to manage asymptomatic disease, including advice, stroke prevention strategies and referral to specialist centres	CbD, mini-CEX	1,3
Behaviours		
Appreciation of cost efficient and patient centred approaches to primary	CbD	1

prevention		
Sensitivity to genetic issues	CbD	1,3,4

15. To undertake a clinical assessment of a patient with suspected vascular dementia and advice on appropriate management

Knowledge	Assessment Methods	GMP
Clinical and pathological features of vascular dementia	CbD	1
Clinical and pathological features of other dementing disorders	CbD	1
Neuroradiological features of dementing disorders	CbD	1
Action and side effects of drugs used in the management of dementia	CbD, mini-CEX	1
Services available to support dementia in the community	CbD	1
Relevant mental capacity legislation	CbD, mini-CEX	1
Tests used by neuro-psychologists to evaluate focal and generalised disorders of cognitive function	CbD	1
Skills		
Ability to appropriately assess, diagnose and investigate a patient with cognitive impairment	mini-CEX	1,3
Ability to evaluate mental capacity	mini-CEX	1,3
Ability to offer management strategies for vascular dementia	mini-CEX	1,3
Behaviours		
Appropriate behaviour towards patient and carer when dealing with issues of cognitive impairment	CbD, mini-CEX	1,3

16. To contribute to the development of stroke service and provide leadership to such a service

Knowledge	Assessment Methods	GMP
Epidemiology of stroke, national and regional and local relevant to age and ethnicity	CbD	1
Range of services required for hospital and community care of stroke patients identified in UK Stroke Strategies and Clinical Guidelines	CbD	1
Planning arrangements for stroke for local population and relationship to NHS structures	CbD	1
Principles of service redesign	CbD	1
How to prepare a business case in partnership with general management	CbD	3
Role of Social Services and Voluntary Sector	CbD, mini-CEX	1,3
Role and principles of audit and Clinical Governance in Stroke Service evaluation	AA, CbD	2
Strategies for primary stroke prevention within a population	CbD	1
Recognise the value of improving services following service evaluation and performance management	CbD	3

Awareness of tools for risk assessment and risk management	CbD	2
Skills		
Infection control and risk minimisation	mini-CEX	1,2
Leadership skills in clinical setting	mini-CEX	1,3
Undertake audit relevant to service provision including local and national audit projects	AA	2
Behaviours		
Recognises the need to use all healthcare resources prudently and appropriately	CbD	3
Recognises the right for equity of access to healthcare	CbD	3
Striving for continuing improvement in delivering patient care services	CbD	3
Openness to alternative ways of service provision	CbD	3
Flexibility in approach	CbD	3
Contribution to patient safety initiatives (e.g. clinical incidents, review of complaints)	CbD	3
Respect for role of others in stroke team	mini-CEX	3

17. To undertake teaching and training of stroke-related topics for medical undergraduates, post-graduates and other healthcare professionals

Knowledge	Assessment Methods	GMP
Adult learning principles relevant to medical education	CbD	1
Differentiate between appraisal and assessment	CbD	1,4
Outline the workplace-based assessments in use relevant to stroke training	CbD	1
Outline the appropriate local course of action to assist the failing trainee	CbD	1,4
Awareness of the UK Forum for Stroke Training	CbD	1
Skills		
Vary teaching format and stimulus, appropriate to situation, subject and audience	TO	1,3
Provide effective feedback after teaching and promote learner reflection	TO	1,3
Participate in effective appraisal	MSF	1,4
Demonstrate effective lecture, presentation, small group and bedside teaching sessions	TO	1,3
Participate in strategies aimed at improving patient education e.g. talking at support group meetings	TO	1,2,3
Be able to lead departmental teaching programmes including journal clubs	TO	1,3
Recognise the failing trainee	MSF	1,4
Behaviours		

Recognise the importance of the role of the physician as an educator within the multi-professional healthcare team	CbD	1,3
Demonstrate willingness to teach trainees and other health and social workers in a variety of settings to maximise effective communication and practical skills	MSF	1,3
Encourage discussions in the clinical settings to colleagues to share knowledge and understanding	mini-CEX	1,3
Show willingness to participate in workplace-based assessments	MSF	1,4
Maintain honesty and objectivity during appraisal and assessment	MSF	1,4
Recognise the importance of personal development as a role model to guide trainees in aspects of good professional behaviour	MSF	1,4

18. To collaborate in research studies relating to stroke and other aspects of cerebrovascular disease		
Knowledge	Assessment Methods	GMP
Principles of clinical research methods, including case control	CbD	1,2
Studies cohort studies, and randomised clinical trials	CbD	1,2
Sources of bias in research studies	CbD	1,2
Uses and abuses of statistics in analysing clinical research	CbD	1,2
Principles, advantages and disadvantages of meta-analysis and systematic reviews	CbD	1,2
The Data Protection Act, the role of the Medicines and Healthcare Products Regulatory Agency (MHRA) and other relevant legislation concerning clinical research	CbD	1,2,4
Principles of research ethics, and consent relating to competent and incompetent individuals	CbD	1,2,4
GMC guidance on good practice in research	CbD	1,2
Funding of stroke research (Stroke Research Network)	CbD	1
Skills		
Analyse and critically assess stroke research publications, including reports of randomised clinical trials	CbD	1,2
Explain research studies to patients and carers in lay language	mini-CEX	1,2,3,4
Offer patients the opportunity to participate in research studies and complete recruitment process	mini-CEX	1,2,3,4
Obtain consent from patients to enter research studies	mini-CEX	1,2,3,4
Complete case report forms at entry and follow up	mini-CEX	1,2,3,4
Complete adverse event report forms appropriately	mini-CEX	1,2,3,4
Behaviours		

Recognises the ethical responsibilities to conduct research with honesty and integrity, safeguarding the interests of the patient and obtaining ethical approval when appropriate	CbD	2,3
Follows guidelines on ethical conduct in research and consent for research	CbD	2,3
Show willingness to the promotion of involvement in research	CbD	1,2,3

4 Learning and Teaching

4.1 The Training Programme

The organisation and delivery of postgraduate training is the statutory responsibility of the General Medical Council (GMC) which devolves responsibility for the local organisation and delivery of training to the deaneries. Each deanery oversees a “School of Medicine” which is comprised of the regional Specialty Training Committees (STCs) in each medical specialty and sub-specialty. Responsibility for the organisation and delivery of sub-specialty training in Stroke Medicine in each deanery is, therefore, the remit of the regional Stroke Medicine STC or equivalent. Each STC has a Training Programme Director who coordinates the training programme in the sub-specialty.

[NB. Consider further training of assessors, trainees and examiners]

The Stroke training programme encompasses the full range of stroke medicine care covering three component parts: (hyper)acute stroke, stroke rehabilitation, and stroke prevention. It is anticipated that some of the training in Stroke Medicine will take place in trainee’s main specialty, as described above. In this phase of stroke training the organisation and delivery of the programme will be supervised by that Specialty’s TPD. The different specialties may contribute different components of the syllabus described within the stroke programme. To ensure an integrated approach between main specialty and Stroke Medicine there should be agreement with the Stroke TPD in advance what components will be covered during training in the main specialty and how the additional year attached to a comprehensive stroke service will provide balance to ensure programme is adequately and completely covered. Training programmes providing the additional year of stroke experience will be required to demonstrate their ability to provide appropriate training opportunities in all aspects of stroke medicine. Approximately one third of the training programme should be devoted to each of the three component parts.

Trainees will only be eligible for certification when the training is undertaken within a programme which has received prior educational approval from GMC after a recommendation from the SSAC in Stroke Medicine. Training may be possible from within a single comprehensive stroke service, so long as all components are covered. However, many training programmes will require attachments to more than one unit or hospital to achieve the curriculum requirements.

The curriculum does not specify how each trainee should occupy their time, but core attachments for work-based experiential learning in specialised acute stroke units, neurovascular clinics and stroke rehabilitation units are required. Attachments to other relevant specialist services, e.g. neurology, neurosurgery, neuro-rehabilitation as well as self-directed learning should be used to fulfill some of the learning objectives, but these will need to be tailored to the trainee’s requirements, their previous training and the stroke curriculum. There should be some flexibility for the pursuit of specialist interests within Stroke Medicine.

The sequence of training over the two years should ensure appropriate progression in experience and responsibility. The training to be provided at each training site should be defined to ensure that, during the programme, the entire curriculum is covered and also that unnecessary duplication and educationally unrewarding experiences are avoided.

4.2 Teaching and Learning Methods

The curriculum will be delivered through a variety of learning experiences. Trainees will learn from practise, developing clinical skills appropriate to their level of training and to their attachment within the department.

Trainees will achieve the competencies described in the curriculum through a variety of learning methods. There will be a balance of different modes of learning from formal teaching programmes to experiential learning 'on the job'. The proportion of time allocated to different learning methods may vary depending on the nature of the attachment within a rotation.

This section identifies the types of situations in which a trainee will learn.

Learning with Peers - There are many opportunities for trainees to learn with their peers. Local postgraduate teaching opportunities allow trainees of varied levels of experience to come together for small group sessions. Examination preparation encourages the formation of self-help groups and learning sets.

Work-based Experiential Learning - The content of work-based experiential learning is decided by the local faculty for education but includes active participation in:

- Specialty clinics. After initial induction, trainees will review patients in outpatient clinics, under direct supervision. The degree of responsibility taken by the trainee will increase as competency increases. As experience and clinical competence increase, trainees will assess 'new' and 'review' patients and present their findings to their clinical supervisor.
- Specialty-specific takes in acute stroke units
- Post-take consultant ward-rounds
- Personal ward rounds and provision of ongoing clinical care on specialist stroke ward attachments. Every patient seen, on the ward or in out-patients, provides a learning opportunity, which will be enhanced by following the patient through the course of their illness: the experience of the evolution of patients' problems over time is a critical part both of the diagnostic process as well as management. Patients seen should provide the basis for critical reading and reflection of clinical problems.
- Undertaking specialist stroke consultations for other in-patient specialties
- Consultant-led ward rounds. Every time a trainee observes another doctor, consultant or fellow trainee, seeing a patient or their relatives there is an opportunity for learning. Ward rounds, including those post-take, should be led by a consultant and include feedback on clinical and decision-making skills.
- Multi-disciplinary team meetings. There are many situations where clinical problems are discussed with clinicians in other disciplines. These provide excellent opportunities for observation of clinical reasoning.

Trainees have supervised responsibility for the care of in-patients. This includes day-to-day review of clinical conditions, note keeping, and the initial management of the acutely ill patient with referral to and liaison with clinical colleagues as necessary. The degree of responsibility taken by the trainee will increase as competency increases. There should be appropriate levels of clinical supervision throughout training with increasing clinical independence and responsibility as learning outcomes are achieved (see Section 5: Feedback and Supervision).

Formal Postgraduate Teaching – The content of these sessions are determined by the local faculty of medical education and will be based on the curriculum. There are many

opportunities throughout the year for formal teaching in the local postgraduate teaching sessions and at regional, national and international meetings. Many of these are organised by the Royal Colleges of Physicians.

Suggested activities include:

- A programme of formal bleep-free regular teaching sessions to cohorts of trainees (e.g. a weekly core training hour of teaching within a Trust)
- Case presentations
- Journal clubs
- Research and audit projects
- Lectures and small group teaching
- Grand Rounds
- Clinical skills demonstrations and teaching
- Critical appraisal and evidence based medicine
- Joint specialty meetings
- Attendance at training programmes organised on a deanery or regional basis, which are designed to cover aspects of the training programme outlined in this curriculum.

Independent Self-Directed Learning -Trainees will use this time in a variety of ways depending upon their stage of learning. Suggested activities include:

- Reading. Web-based material e.g. Imaging interpretation
- Maintenance of personal portfolio (self-assessment, reflective learning, personal development plan)
- Audit and research projects
- Reading journals and appropriate texts
- Achieving personal learning goals beyond the essential, core curriculum

Formal Study Courses - Time to be made available for formal courses is encouraged, subject to local conditions of service. Examples include national training courses organised by British Association of Stroke Physicians and those of relevant topics organised by the Royal Colleges

4.3 Research

Trainees who wish to acquire extensive research competencies, in addition to those specified in this curriculum, may undertake a research project as an ideal way of obtaining those competencies. Options to be considered include taking time out of programme to complete a specified project or research degree. This will be managed via their main specialty.

5 Assessment

5.1 The Assessment System

The purpose of the assessment system is to:

- Enhance learning by providing formative assessment, enabling trainees to receive immediate feedback, measure their own performance and identify areas for development;
- Drive learning and enhance the training process by making it clear what is required of trainees and motivating them to ensure they receive suitable training and experience;

- Provide robust, summative evidence that trainees are meeting the curriculum standards during the training programme;
- Ensure trainees are acquiring competencies within the domains of Good Medical Practice;
- Assess trainees' actual performance in the workplace;
- Ensure that trainees possess the essential underlying knowledge required for their specialty;
- inform the Annual Review of Competence Progression (ARCP), identifying any requirements for targeted or additional training where necessary and facilitating decisions regarding progression through the training programme;
- Identify trainees who should be advised to consider changes of career direction.

Workplace-based assessments will take place throughout the training programme to allow trainees to continually gather evidence of learning and to provide trainees with formative feedback. They are not individually summative but overall outcomes from a number of such assessments provide evidence for summative decision making. The number and range of these will ensure a reliable assessment of the training relevant to their stage of training and achieve coverage of the curriculum.

5.2 Assessment Blueprint

In the syllabus (3.3) the “Assessment Methods” shown are those that are appropriate as possible methods that could be used to assess each competency. It is not expected that all competencies will be assessed and that where they are assessed not every method will be used.

5.3 Assessment Methods

The following assessment methods are used in the integrated assessment system:

Examinations and certificates

- NIH Stroke Scale Certificate of training
- International Conference on Harmonisation - Good Clinical Practice - Certificate of Learning (ICH GCP)

Both these certificates are gained following on-line training, feedback and once successfully completed, a certificate is provided. The NIH Stroke Scale is a critical part of acute stroke assessment and the on-line training programme is free and provided by The American Stroke Association, The American Academy of Neurology and National Institute of Neurological Disorders and Stroke. It is a certified training program for healthcare professionals to learn or review how to administer the NIH Stroke Scale for acute stroke assessment. The program uses footage from the 2004 CINE Golden Eagle Award winner and new NIH Stroke Scale training videos developed by the NINDS.

The ICP-GPC is a certificate gained after one-day training which covers basic standards for healthcare staff involved in recruiting patients into clinical trials and is relevant to one of the objectives in the syllabus which focuses on research studies relating to stroke and other aspects of cerebrovascular disease.

Workplace-based assessments (WPBAs)

- Multi-Source Feedback (MSF)
- mini-Clinical Evaluation Exercise (mini-CEX)
- Case-Based Discussion (CbD)
- Patient Survey (PS)
- Audit Assessment (AA)
- Teaching Observation (TO)

These methods are described briefly below. More information about these methods including guidance for trainees and assessors is available in the ePortfolio and on the JRCPTB website www.jrcptb.org.uk. Workplace-based assessments should be recorded in the trainee's ePortfolio. The workplace-based assessment methods include feedback opportunities as an integral part of the assessment process; this is explained in the guidance notes provided for the techniques.

Multisource feedback (MSF)

This tool is a method of assessing generic skills such as communication, leadership, team working, reliability etc, across the domains of Good Medical Practice. This provides objective systematic collection and feedback of performance data on a trainee, derived from a number of colleagues. 'Raters' are individuals with whom the trainee works, and includes doctors, administration staff, and other allied professionals. The trainee will not see the individual responses by raters; feedback is given to the trainee by the Educational Supervisor.

Mini-Clinical Evaluation Exercise (mini-CEX)

This tool evaluates a clinical encounter with a patient to provide an indication of competence in skills essential for good clinical care such as history taking, examination and clinical reasoning. The trainee receives immediate feedback to aid learning. The mini-CEX can be used at any time and in any setting when there is a trainee and patient interaction and an assessor is available.

Case based Discussion (CbD)

The CbD assesses the performance of a trainee in their management of a patient to provide an indication of competence in areas such as clinical reasoning, decision-making and application of medical knowledge in relation to patient care. It also serves as a method to document conversations about, and presentations of, cases by trainees. The CbD should include discussion about a written record (such as written case notes, out-patient letter, and discharge summary). A typical encounter might be when presenting newly referred patients in the out-patient department.

Patient Survey (PS)

Patient Survey address issues, including behaviour of the doctor and effectiveness of the consultation, which are important to patients. It is intended to assess the trainee's performance in areas such as interpersonal skills, communication skills and professionalism by concentrating solely on their performance during one consultation.

Audit Assessment Tool (AA)

The Audit Assessment Tool is designed to assess a trainee's competence in completing an audit. The Audit Assessment can be based on review of audit documentation OR on a presentation of the audit at a meeting. If possible the trainee should be assessed on the same audit by more than one assessor.

Teaching observation (TO)

The Teaching Observation form is designed to provide structured, formative feedback to trainees on their competence at teaching. The Teaching Observation can be based on any instance of formalised teaching by the trainee which has been observed by the assessor. The process should be trainee-led (identifying appropriate teaching sessions and assessors).

Log Book to record thrombolysis

All trainees should maintain a continuous log of their thrombolysis experience during their advanced stroke training year. Whilst it is accepted that absolute numbers of cases seen does not guarantee competence, the log book will serve to compliment more formative competency of workplace based assessments and must be signed off by the Educational Supervisor as accurate prior to the Stroke Year Assessment.

5.4 Decisions on Progress (ARCP)

The annual review of Competence Progressions (ARCP) is the formal method by which a trainee's progression through her/his training programme is monitored and recorded. ARCP is not an assessment – it is the review of evidence of training and assessment. The ARCP process is described in A Reference Guide for Postgraduate Specialty Training in the UK (the "Gold Guide" – available from www.mmc.nhs.uk). Deaneries are responsible for organising and conducting ARCPs. The evidence to be reviewed by ARCP panels should be collected in the trainee's ePortfolio.

For a trainee undertaking sub-specialty training a sub-specialty review of competence progression is required. This can be incorporated into main specialty ARCP but requires involvement of a programme director for stroke as well as main specialty panel representatives. The timing of an ARCP for Stroke Medicine will be flexible depending upon the timing of stroke training within programmes but will be undertaken prior to time-equivalent of one year training and a further one prior to time-equivalent of two years training from both main specialty and those completed in additional year. The assessment plan for completion during additional year of sub-specialty training is described below and the ARCP Decision Aid which gives details of the evidence required by trainees for submission to ARCP panel.

The ARCP Decision Aid for Stroke Medicine will be based on evidence of assessments and the educational supervisor's report.

During the additional year of training as a minimum the trainee will complete 4 mini-CEX and 4 case based discussions, 2 for each module (ensuring aspects of each objective in the syllabus are covered) within a stroke training year. In addition they will demonstrate that appropriate assessments have been undertaken in the stroke training components of their main specialty.

In addition a multi-source feedback which should include member of the multidisciplinary team and AA tool covering an aspect of stroke should be completed in the additional year of training. (See attached table)

5.5 (i) ARCP Decision Aid

This is an overview of the expected minimum number of assessments that any trainee will complete **during the year of advanced stroke training**. It is expected that at least 75% of assessments will be completed by **Specialty Year Assessment (SYA)**.

	Advanced Stroke Medicine Training
mini-CEX	Minimum of 4 mini-CEX. To include a representative range of stroke presentations, e.g., 1 hyper-acute assessment, 1 assessment of an acute presentation assessment, 1 secondary prevention assessment and 1 rehabilitation setting assessment
CbD	Minimum of 4 CbD To include a representative range of patient presentations e.g. 1 hyper-acute assessment, 1 assessment of an acute presentation, 1 secondary prevention assessment and 1 rehabilitation setting assessment NB: One CbD or mini-CEX must be about administration of thrombolysis therapy
MSF	One (minimum of 12 replies)
ACAT	N/A
PS	One
Clinical & Educational Supervisor Reports	Specific comment is required on the following: <ul style="list-style-type: none"> • trainees are autonomously competent to assess and manage patients presenting with all common neurovascular conditions • trainees are autonomously competent in managing neurovascular patients presenting from all clinical areas including, GP referrals, A&E, high dependency units and rehabilitation units • trainees have an assessment and referral strategy for patients presenting with unusual conditions which may present like common neurovascular conditions
Audit or Research Project Supervisor Reports	AUDIT: Evidence that an audit has been completed – including significant involvement with design, data collection and analysis, presentation of results and future recommendations, e.g. a change of practise using Audit Assessment Tool RESEARCH: Evidence of ability to critically appraise current neurovascular clinical trials and how these may be interpreted to improve current clinical practice. Knowledge of ongoing clinical trials relevant to Stroke Medicine, hosting by the Stroke Research Network and basics of research governance. If appropriate for the individual, evidence of ability to design and conduct a research project (i.e. substantive research secondment undertaken) Evidence of ICH-GCP training
Assessed Teaching Presentation	Evidence of lecture or seminar teaching with evaluation by feedback from students
Formal Course Report or Certificate	Stroke Thrombolysis learning day Evidence of NIHSS Certification

Glossary: mini-CEX = Mini-Clinical examination assessment, CbD = Case-based Discussion, MSF = Multi-source Feedback, ACAT = Acute Care Assessment Tool, PS = Patient and Carer Survey Questionnaire, DOPS = Directly Observed Procedural Skills, ICH-GCP = International Conference on Harmonisation – Good Medical Practice.

5.6 (ii) ARCP Decision Aid

This is a guide to what assessments or certificates should be completed by each end of year ARCP. It will be up to individual programme directors to interpret this guide bearing in mind the flexible nature of individual training programmes. However it is expected that 75% of assessments should be completed by PYA.

	OUTCOME 1	OUTCOME 2	OUTCOME 3
Main Specialty	<p>GERIATRIC MED: Satisfactory Audit Satisfactory Teaching. Presentation. Teaching Course 6 CbD (2 Special Interest). 6 mini-CEX (1 Rehab, 1 Continuing Care, 2 Sub-specialty). 2 stroke sub-specialty work-based assessments.</p> <p>NEUROLOGY: Satisfactory progress when completing the year preceding Advanced Stroke Training (i.e. outcome 1). 2 stroke subspecialty work-based assessments.</p> <p>ACUTE MEDICINE: Satisfactory progress when completing the year preceding Advanced Stroke Training (i.e. outcome 1). 2 stroke subspecialty work-based assessments.</p>	<p>GERIATRIC MED: SCE not passed. Poor supervisors' report. No up-to-date ALS. Few or Poor ACAT, CbD, mini-CEX. No stroke subspecialty work based assessments</p> <p>NEUROLOGY: Unsatisfactory progress when completing the year preceding Advanced Stroke Training (i.e. outcome 2 of main ARCP)</p> <p>ACUTE MEDICINE: Unsatisfactory progress when completing the year preceding Advanced Stroke Training (i.e. outcome 2 of main ARCP)</p>	<p>GERIATRIC MED: Very Poor supervisors' report. ALS uncompleted for 2 years. No or unsatisfactory Audit. No or very poor CbD, mini-CEX</p> <p>NEUROLOGY: Very unsatisfactory progress when completing the year preceding Advanced Stroke Training (i.e. outcome 3 of main ARCP)</p> <p>ACUTE MEDICINE: Very unsatisfactory progress when completing the year preceding Advanced Stroke Training (i.e. outcome 3 of main ARCP)</p>
Stroke Specialty	<p>4 satisfactory mini-CEX plus 4 CbDs (incl. 1 hyper-acute, 1 acute, 1 secondary prevention and 1 rehabilitation) 1 satisfactory MSF 1 completed Audit 1 PS during stroke attachment Thrombolysis training attendance</p>	<p>Significant issues arising from Supervisors report. Unsatisfactory work based assessments. Evidence of insufficient experience in specific competencies, e.g. acute thrombolysis, management of rehabilitation</p>	<p>Very poor Supervisors' report with serious concerns about patient safety. Systematically very poor MSF. Evidence that trainee is not autonomously competent as future Stroke Consultant. These may trigger a review of trainees' progress and possibility of remedial training.</p>
FINAL EXIT ARCP	<p>GERIATRIC MED: Passed MRCP & SCE Current ALS 4 satisfactory ACATs 26 satisfactory CbDs 25 satisfactory mini-CEXs 2 satisfactory MSFs, PSs, DOPS 1 satisfactory academic and 1 clinical governance portfolio.</p> <p>If identified in Outcome 2 of the Stroke Specialty year, any outstanding competencies should be completed.</p> <p>NEUROLOGY OR ACUTE MEDICINE: Satisfactory progress at completing final year of main specialty.</p> <p>If identified in Outcome 2 of the Stroke Specialty year, any outstanding competencies should be completed.</p>		<p>Any remaining areas with unsatisfactory final workplace-based assessments or absence of essential certificate or unsatisfactory academic or Clinical Governance Portfolio</p> <p>Evidence that the trainee is not autonomously competent as a future Stroke Consultant</p>

5.7 Penultimate Year Assessment (PYA)

A sub-specialty assessment in Stroke Medicine will be undertaken as the candidate approaches the end of their stroke training [i.e. when they have completed 18 months of the two year training programme]. This will be part of their PYA.

The penultimate ARCP prior to the anticipated CCT date will include an external assessor from outside the training programme and will require a Stroke sub-specialty representative. JRCPTB and the deanery will coordinate the appointment of this assessor.

Whilst the ARCP will be a review of evidence, the PYA will include a face to face component. However if trainee has undertaken sub-specialty training at an early stage a Specialty Year Assessment (SYA) will take place (i.e. face to face) to ensure any targeted training is identified during their remaining training period which would be signed off by PYA in main specialty.

5.8 Complaints and Appeals

All workplace-based assessment methods incorporate direct feedback from the assessor to the trainee and the opportunity to discuss the outcome. If a trainee has a complaint about the outcome from a specific assessment this is their first opportunity to raise it.

Appeals against decisions concerning in-year assessments will be handled at deanery level and deaneries are responsible for setting up and reviewing suitable processes. If a formal complaint about assessment is to be pursued this should be accountable to the regional deanery. Continuing concern should be referred to the Associate Dean.

6 Supervision and Feedback

6.1 Supervision

To ensure there is appropriate supervision trainees will at all times have a named Educational Supervisor and Clinical Supervisor. Depending on local arrangements these roles may be combined into a single role of Educational Supervisor.

Trainees require supervision to ensure their educational needs are met. In the context of Stroke Medicine, components of which are delivered both in main specialty and sub-specialty training programmes, careful co-ordination is required to ensure the curriculum is fully covered between different posts, that Stroke Medicine training incorporated into the main specialty is agreed and organised around the trainees needs prospectively, and that there is no unnecessary duplication. This will require regular meetings between the main and stroke programme directors, with or without the trainees.

All elements of clinical work in training posts must be supervised with the level of supervision varying depending on the experience of the trainee and the clinical exposure and case mix undertaken. Outpatient and referral supervision must routinely include the opportunity to personally discuss all cases if required. As training progresses the trainee should have the opportunity for increasing autonomy, consistent with safe and effective care for the patient.

The responsibilities of supervisors have been defined by GMC in the document 'Operational Guide for the GMC Quality Framework'. These definitions have been agreed with the National Association of Clinical Tutors, the Academy of Medical Royal Colleges and the Gold Guide team at MMC, and are reproduced below:

Educational Supervisor

A trainer who is selected and appropriately trained to be responsible for the overall supervision and management of a specified trainee's educational progress during a training placement or a series of placements. The Educational Supervisor is responsible for the trainee's Educational Agreement.

Clinical supervisor

A trainer who is selected and appropriately training to be responsible for overseeing a specified trainee's clinical work and providing constructive feedback during a training placement. Some training schemes appoint an Educational Supervisor for each placement. The roles of Clinical and Educational Supervisor may then be merged.

Educational supervisors will only be appointed by Deaneries if they demonstrate they have undertaken appropriate training for this role. Such training will be provided by Deaneries and Royal Colleges. In addition they should be working as a Consultant in a stroke service but may be a neurologist, geriatrician, rehabilitation medicine or Stroke Medicine consultant. Regular meetings between Regional Training Programme Director and Educational Supervisors will ensure there is appropriate awareness of the stroke curriculum and the role of each post in the training programme. These meetings will provide a framework to support the Educational Supervisors in their role.

The Educational Supervisor will have responsibility to ensure regular appraisal is undertaken with the trainee. In addition they will ensure clinical supervisors undertake workplace-based assessments and give appropriate clinical supervision and feedback to trainees work.

The Educational Supervisor, when meeting with the trainee, should discuss issues of clinical governance, risk management and any report of any untoward clinical incidents involving the trainee. If the clinical service has any concerns about the performance of the trainee, or there were issues of doctor or patient safety, these would be discussed with the Educational Supervisor. These processes, which are integral to trainee development, must not detract from the statutory duty of the service to deliver effective clinical governance through its management systems.

Clinical supervisors have responsibility to give clinical feedback on day-to-day performance and following workplace-based assessments. They should have undertaken appropriate training in format and requirements of workplace-based assessments.

Effective educational and clinical supervision will only take place if there is appropriate time allocated in a job plan and the Regional Programme Directors and Deanery will have a role in assessing this.

Trainees have a responsibility to arrange meetings with educational supervisor with appropriate advanced planning and to liaise with them and clinical supervisor to ensure appraisal and work-based assessments are undertaken in a timely fashion.

6.2 Appraisal

A formal process of appraisals and reviews underpins training. This process ensures adequate supervision during training, provides continuity between posts and different supervisors and is one of the main ways of providing feedback to trainees. All appraisals should be recorded in the ePortfolio.

Induction Appraisal

The trainee and Stroke Medicine educational supervisor should have an appraisal meeting at the beginning of each post to review the trainee's progress so far, agree learning objectives for the post ahead and identify the learning opportunities presented by the post. Reviewing progress through the curriculum will help trainees to compile an effective Personal Development Plan (PDP) of objectives for the upcoming post. This PDP should be agreed during the Induction Appraisal. The trainee and supervisor should also both sign the educational agreement in the ePortfolio at this time, recording their commitment to the training process.

Mid-point Review

This meeting between trainee and educational supervisor is mandatory (except when an attachment is shorter than 6 months), but is encouraged particularly if either the trainee or educational or clinical supervisor has training concerns or the trainee has been set specific targeted training objectives at their ARCP. At this meeting trainees should review their PDP with their supervisor using evidence from the e-portfolio. Workplace-based assessments and progress through the curriculum can be reviewed to ensure trainees are progressing satisfactorily, and attendance at educational events should also be reviewed. The PDP can be amended at this review.

End of Attachment Appraisal

Trainees should review the PDP and curriculum progress with their Stroke Medicine educational supervisor using evidence from the ePortfolio. Specific concerns may be highlighted from this appraisal. The end of attachment appraisal form should record areas where further work is required to overcome shortcomings. Further evidence of competence in certain areas may be needed, such as planned workplace-based assessments, and this should be recorded. If there are significant concerns following the end of attachment appraisal then the programme director should be informed.

7 Managing Curriculum Implementation

Membership of the Stroke Advisory Committee of the JRCPTB includes Regional Programme Directors from the Deaneries in England, Wales, Northern Ireland and Scotland. They will liaise with Stroke Educational Supervisor in their Deaneries to ensure curriculum implementation takes place. They will also need to liaise closely with other Deanery Programme Directors particularly Neurology and Geriatric Medicine.

It is anticipated that trainees will participate in Deanery training committees. Feedback from trainees together with information received at specialty year assessments will provide feedback on implementation.

Opportunities for the SSAC to meet with Programme Directors and Educational Supervisors on an annual basis hosted by JRCPTB or at British Association of Stroke Physicians meetings will allow training of educational supervisors both in terms of the content, training programme and assessments. The British Association of Stroke Physicians Trainees Committee has representation on the BASP Training &

Education Subcommittee and Executive committee, which encourages discussion of the curriculum and its implementation across all levels.

7.1 Intended Use of Curriculum by Trainers and Trainees

This curriculum and ePortfolio are web-based documents which are available from the Joint Royal College of Physicians Training Board (JRCPTB) website www.jrcptb.org.uk

The educational supervisors and trainers can access the up-to-date curriculum from the JRCPTB website and will be expected to use it as a guide for their training programme.

Each trainee will engage with the curriculum by maintaining a portfolio. The trainee will use the curriculum to develop learning objectives and reflect on learning experiences.

The Stroke-Specialty Advisory Committee (SSAC) will inform Deaneries via the Regional Programme Directors of the curriculum content and the standards which are expected of posts which may contribute to a training programme. The Regional Programme Director will need to liaise closely with other relevant specialties to ensure a 2 year programme is implemented and full coverage of the curriculum. This may require specific targeted training, particularly during the year of attachment to a comprehensive stroke unit to ensure all aspects of the curriculum are available to the trainee. The liaison would be facilitated if there is Stroke Medicine representation on other appropriate Regional Training Committees e.g. Neurology and Geriatric Medicine.

7.2 Recording Progress

On enrolling with JRCPTB, trainees will be given access to the ePortfolio for Stroke Medicine. The ePortfolio allows evidence to be built up to inform decisions on a trainee's progress and provides tools to support trainees' education and development.

The trainee's main responsibilities are to ensure the ePortfolio is kept up to date, arrange assessments and ensure they are recorded, prepare drafts of appraisal form, maintain their personal development plan, record their reflections on learning and record their progress through the curriculum.

The supervisor's main responsibilities are to use ePortfolio evidence such as outcomes of assessments, reflections and personal development plans to inform appraisal meetings. They are also expected to update the trainee's record of progress through the curriculum, write end-of-attachment appraisals and supervisor's reports.

8 Curriculum Review and Updating

- Remains relevant to current practice

The curriculum will be subject to an annual formal review within the SSAC. This review will be informed by curriculum evaluation and monitoring. The SSAC will receive the annual GMC trainee questionnaire, reports from other sources including

the educational supervisors, programme directors, postgraduate deans, trainee contact, service providers, patients and voluntary organisations.

The SSAC will ensure that it will respond swiftly to new service or treatment developments influencing the sub-specialty and amend the curriculum appropriately. Regular annual review will ensure consultation with stakeholders needed to deliver an up to date, 'fit for purpose' sub-specialty curriculum. The SSAC in Stroke Medicine has representation which includes an NHS Medical Director and additional representation from the voluntary sector.

The British Association of Stroke Physicians can advise on curriculum update through the Training & Education and Service Development and Quality Subcommittees. These groups will contact the SSAC, or can be consulted by the SSAC, if there is a development in Stroke Medicine or organisation of services possibly necessitating revision of the curriculum.

BASP also has representation on the UK Forum for Stroke Training, a multidisciplinary group which has defined the Stroke Specific Educational Framework for UK stroke services, thereby allowing awareness of training developments for allied health professions which may impact upon the Stroke Medicine curriculum.

9 Equality and Diversity

The Royal Colleges of Physicians will comply, and ensure compliance, with the requirements of equality and diversity legislation, such as the:

- Race Relations (Amendment) Act 2000
- Disability Discrimination Act 1995
- Human Rights Act 1998
- Employment Equality (Age) Regulation 2006
- Special Educational Needs and Disabilities Act 2001
- Data Protection Acts 1984 and 1998

The Federation of the Royal Colleges of Physicians believes that equality of opportunity is fundamental to the many and varied ways in which individuals become involved with the Colleges, either as members of staff and Officers; as advisers from the medical profession; as members of the Colleges' professional bodies or as doctors in training and examination candidates. Accordingly, it warmly welcomes contributors and applicants from as diverse a population as possible, and actively seeks to recruit people to all its activities regardless of race, religion, ethnic origin, disability, age, gender or sexual orientation.

Deanery quality assurance will ensure that each training programme complies with the equality and diversity standards in postgraduate medical training as set by GMC.

Compliance with anti-discriminatory practice will be assured through:

- monitoring of recruitment processes;
- ensuring all College representatives and Programme Directors have attended appropriate training sessions prior to appointment or within 12 months of taking up post;
- Deaneries must ensure that educational supervisors have had equality and diversity training (at least as an e learning module) every 3 years
- Deaneries must ensure that any specialist participating in trainee interview/appointments committees or processes has had equality and diversity training (at least as an e module) every 3 years.

- ensuring trainees have an appropriate, confidential and supportive route to report examples of inappropriate behaviour of a discriminatory nature. Deaneries and Programme Directors must ensure that on appointment trainees are made aware of the route in which inappropriate or discriminatory behaviour can be reported and supplied with contact names and numbers. Deaneries must also ensure contingency mechanisms are in place if trainees feel unhappy with the response or uncomfortable with the contact individual.
- monitoring of College Examinations;
- ensuring all assessments discriminate on objective and appropriate criteria and do not unfairly disadvantage trainees because of gender, ethnicity, sexual orientation or disability (other than that which would make it impossible to practise safely as a physician). All efforts shall be made to ensure the participation of people with a disability in training.