HIGHER MEDICAL TRAINING

CURRICULUM

FOR

SUB-SPECIALTY OF STROKE MEDICINE

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STROKE MEDICINE

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. Both the NSF on Stroke (included within the Framework for Older People), NHS Quality Improvement Scotland, Stroke Services and the 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, ageing 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 provide specialist stroke services throughout the UK. The RCP National Sentinel Audit for Stroke demonstrated that expert stroke care is currently absent in many health districts. This programme has been developed in response to the clear need for the NHS to train physicians in the specialist expertise of stroke medicine. After satisfactory completion of Sub-Specialty training in Stroke Medicine, trainees would be eligible to have the Sub-Specialty of Stroke Medicine included in their entry in the GMC's Specialist Register, after the award of a CCST in their parent specialty.

ROLE OF STROKE PHYSICIAN

The primary purpose of a stroke physician is to provide 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. 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. 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.

AIMS OF TRAINING

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 provide a specialist stroke service. This programme does not seek to replace or compete with a parent specialty training programme, but will 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:

1. 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;
2. 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;
3. The competencies to develop management plans for people living with stroke illness including treatment, rehabilitation, health promotion, secondary prevention and long-term support;
4. The attitudes and communication skills to contribute to a comprehensive multidisciplinary stroke service in hospital and/or the community and to work closely with other relevant agencies;
5. The ability to work effectively within a multidisciplinary stroke service;
6. The abilities to advise, develop and evaluate district stroke services in partnership with local health and social care communities.

ENTRY REQUIREMENTS

This programme is open to all trainees holding an NTN in a medical specialty. It assumes that stroke medicine trainees have received or will receive training in some aspects of stroke medicine in their parent specialty in addition to the period of Sub-Specialty training covered by this document. Trainees may come from backgrounds in Geriatric Medicine, Neurology, Rehabilitation Medicine, Cardiology, Clinical Pharmacology and Therapeutics, or General (Internal) Medicine. This curriculum should therefore be read in conjunction with that of the parent specialty. The programme is designed to ensure that practitioners possess the core competencies in the practice of stroke medicine necessary to function as a consultant with a specialist interest in stroke.

DURATION AND ORGANISATION OF TRAINING

The duration of Sub-Specialty training in stroke is a minimum of one year. Most trainees are expected to be seconded from a medical specialty where there is already a substantial component that is relevant to stroke. Trainees from medical specialties who have not had exposure to training in stroke medicine and/or rehabilitation may need to spend up to two years in stroke Sub-Specialty training. The programme is not intended to be unduly prescriptive but must satisfy the regional training committee that trainees have acquired the required competencies to function as a specialist in stroke medicine.

Trainees will need to demonstrate their acquisition of the knowledge, skills and attitudes that are expected of a modern stroke specialist above those of their parent specialty. There are three basic 'modules': acute stroke, stroke rehabilitation and stroke prevention. Attention should be paid to each module, with the proportion spent on each module depending on the trainee's previous or planned future experience in their parent specialty. The modules cannot be viewed in isolation: they represent a continuum of care for the stroke patient.

Trainees will only be eligible for certification when the Sub-Specialty training is undertaken within a programme which has received prior training approval from the Stroke Medicine Sub-Specialty SAC. Training may be possible from within a single comprehensive stroke service, but only if it can be demonstrated that all core components are covered. Alternatively, training may need to take place in more than one centre.

The programme does not specify how each trainee should occupy their time, but core attachments to acute and rehabilitation stroke services based in specialised stroke units are required. Attachments to other relevant specialist services can also be used to fulfil some of the learning objectives but will need to be tailored to the trainee's requirements and the stroke curriculum. There should be flexibility for the pursuit of specialist interests within stroke medicine.

Throughout specialist registrar training, trainees will have been expected to acquire skills in evidence-based practice, audit, outcome measurement, quality improvement, cost-effectiveness, service organisation, management, teaching and research. Thus, these aspects have not been restated within this programme. However, trainees will be expected to demonstrate the ability to apply such skills to stroke service provision. Exposure to stroke audit is recommended.

LEARNING OBJECTIVES

The primary learning objectives have been restricted to 3 major topics: acute stroke, stroke rehabilitation and stroke prevention. Further details are in the attached training grids. There will be a written record of training which will clearly identify the components of training set out in the curriculum and will demonstrate the achievement of competence in the prescribed areas. The record will be countersigned by trainers and will play an important part in the assessment process. Satisfactory completion of specialist training in stroke medicine will require that the full content of Sub-Specialty training has been completed before application for certification. The assessment of satisfactory training in stroke medicine will be undertaken at an appropriate point in time by an independent trainer nominated by the Stroke Medicine Sub-Specialty SAC.

ROLE OF EDUCATIONAL SUPERVISOR

The educational supervisor will be responsible for ensuring that trainees receive training in all areas of the core stroke curriculum. Thus, he/she will review the overall educational needs of the trainee in the light of his/her parent specialty; liaise with local stroke training units and ensure that the trainee receives and meets the requirements of the stroke curriculum. He/she will ensure satisfactory completion of the stroke training record upon which assessment and certification will be based. Within the limits of the guidance in this document and as advised by the Stroke Medicine Sub-Specialty SAC, the educational supervisor will have some flexibility in organising the training programme in stroke. Training programmes in stroke medicine will be approved by the Stroke Medicine Sub-Specialty SAC.

RESPONSIBILITY OF THE TRAINEE

The person ultimately responsible for an individual's training in stroke medicine is the trainee him/herself. The trainee will provide the educational supervisor with a clear outline of the training programme already undertaken in the parent specialty by way of the written training record. The trainee will be aware of the requirements of the stroke curriculum and agree his/her future stroke training needs with the trainer in light of advice given by the Stroke Medicine Sub-Specialty SAC. He/she should consider career aspirations and if extended stroke training of more than a year is desired, this should be established at the outset. The strengths and weaknesses in the parent training in

respect of stroke should be discussed openly with the educational supervisor and the programme developed jointly to address these issues. The trainee must keep a log book and should provide this to the educational supervisor and/or trainer(s) for regular review.

READING LIST

Trainees are strongly encouraged to further their knowledge of Stroke Medicine and a recommended reading list has been compiled and will be found on the BASP and JCHMT websites.

CONCLUSION

The exposure to aspects of stroke management outlined in this programme will serve as a basis for future professional development throughout a long and rewarding career in delivery of stroke care, whether as a service planner, programme director, consultant clinician or academic clinical researcher.

1 ACUTE STROKE

OBJECTIVE - To provide the trainee with the knowledge and skills to contribute to a comprehensive specialist service for patients with acute stroke
To ensure that all trainees are competent in the assessment and management of acute stroke

SUBJECT MATTER	TEACHING/LEARNING METHOD	ASSESSMENT	EVIDENCE OF COMPETENCE TO BE INCLUDED IN RECORD
Knowledge ▪ Anatomy and pathophysiology of various types of stroke ▪ Classification schemes for acute stroke (eg TOAST, OCSP) ▪ Scales for describing severity of acute stroke (eg NIHSS, SSS) ▪ Interpretation of CT and MRI brain scans including hyperacute imaging (eg CT, MRI, Doppler ultrasound, echocardiography) echocardiography (including TOE) and indications for angiography. ▪ The differential diagnosis of acute stroke, and initial management of conditions that mimic stroke ▪ The place of acute intervention, including thrombolysis and neurosurgery ▪ Complications of acute stroke and their multidisciplinary management ▪ Rare causes of stroke and stroke in younger age groups ▪ Concomitant conditions and their influence on management ▪ Ethical and legal issues relating to management of stroke illness	**Experience** ▪ Experience of working within a specialist acute stroke unit, including experience of on-call for acute admission of suspected stroke patients ▪ Participation in a cerebrovascular clinic for assessment of TIA and minor stroke ▪ Exposure to longer term outcome of the full range of patients admitted to an acute stroke unit (including those who are not referred for rehabilitation) ▪ Experience of assessment of patients for acute treatment, particularly thrombolysis, and for secondary prevention, especially anticoagulation & antiplatelet drugs ▪ Experience of decision making about the management of nutrition, hydration and infection; end of life decisions; and consent to treatment	▪ Evaluation by direct observation ▪ Review of case sheets, corres-pondence ▪ Reports from members of interdisciplinary team and patients/carers	• Satisfactory training & assessment records

Skills ▪ Clinical assessment of stroke type and severity in the acute situation ▪ The investigation of suspected acute stroke with appropriate use of specialist colleagues' expertise and of radiological resources ▪ Interpretation of CT and MRI brain scans, hyperacute and late imaging ▪ Provision of general medical care to acutely ill patients with widespread vascular disease and/or with cardio-respiratory or other complications of stroke ▪ Provision of intensive monitoring to acute patients ▪ Management of patients with acute dysphagia ▪ Early rehabilitation and appropriate referral to further rehabilitation services with efficient use of resources ▪ Provision of palliative care ▪ Assessment and management of nutrition within a multi-disciplinary team **Attitudes** ▪ To value patient and carers views on treatment decisions ▪ Awareness of cultural and religious issues relevant to stroke	▪ Attachments to coronary care, acute general medicine and geriatrics, intensive care, neurology, neuroradiology, vascular/neuro-surgery, neuropsychology and palliative care may have direct relevance ▪ Personal study including reading recent national and international guidelines for stroke management and intervention trials, and use of training stroke assessment videotapes and CD-ROMs		

2 STROKE REHABILITATION

OBJECTIVE A

To provide specialist assessment of patients with stroke to facilitate rehabilitation to improve outcome and provide acute and long term support

SUBJECT MATTER	TEACHING/LEARNING METHOD	ASSESSMENT	EVIDENCE OF COMPETENCE TO BE INCLUDED IN RECORD
Knowledge • Natural history and prognosis of stroke • Classification schemes and scales used to guide prognosis • Mechanisms and patterns of recovery, neural plasticity, learning and skill acquisition • Complications of stroke (e.g. depression) that arise during stroke rehabilitation • Models of disability and their relevance to clinical practice • Classification of language and cognitive impairments • Causes and classification of vascular dementia **Skills** • Familiarity with scales commonly used in stroke rehabilitation, their validity, utility and limitations • Setting and reassessing rehabilitation goals • Prevention, identification and management of the common physical, psychological, communication, cognitive, perceptual, ADL and socio-economic problems post stroke • Assessment and management of specialist topics eg,post-stroke pain, spasticity, dysphagia, nutrition, orthotics, seating, epilepsy and depression • Medical assessment & screening techniques for "bedside" cognitive and language impairment	**Experience** • Assessment and management of patients in stroke units, neuro-rehabilitation units, OP/day hospital/community • Personal study including reading recent national and international guidelines for stroke management and intervention trials • Specialist clinics (e.g. spasticity management, psychosexual clinics, special seating) may be relevant	• Evaluation by direct observation • Review of case sheets/correspondence • Reports from members of interdisciplinary team and patients/carers	• Satisfactory training & assessment records

OBJECTIVE B

To provide the trainee with the , knowledge, skills and attitudes to contribute to a comprehensive, multidisciplinary, co-ordinated and goal-orientated rehabilitation service

SUBJECT MATTER	TEACHING/LEARNING METHOD	ASSESSMENT	EVIDENCE OF COMPETENCE TO BE INCLUDED IN RECORD
Knowledge • Understanding multidisciplinary team working in stroke and role of team members • Planning discharge from hospital • The emotional, psychological and socioeconomic consequences of stroke on patients and carers **Skills** • Participation/leadership within multidisciplinary stroke rehabilitation team • Facilitating the transition from active rehabilitation to maintenance and support • Involving and working with carers • Rehabilitation within day hospital, community intermediate care and outpatient settings • Audit and outcome measurement of stroke services **Attitudes** • To value the patient, carers and other MDT members' perspectives in goal planning and their contribution to the rehabilitation process	**Experience** • Working within hospital and community services in an organized, multidisciplinary stroke rehabilitation service • Multidisciplinary stroke case conferences • Experience of non-health service funded provision for stroke care e.g. volunteers. • Personal study of current law relating to the management of estate, power of attorney and powers of the court of protection as relating to stroke patients.	• Evaluation by direct observation • Review of case sheets/correspondence • Reports from members of interdisciplinary team and patients/carers	• Satisfactory training & assessment records

OBJECTIVE C

To provide the trainee with the knowledge, skills and attitudes to enhance activities and participation, to re-integrate patients with stroke illness within their community, family, social and occupational roles (formerly known as disability and handicap)

SUBJECT MATTER	TEACHING/LEARNING METHOD	ASSESSMENT	EVIDENCE OF COMPETENCE TO BE INCLUDED IN RECORD
Knowledge • Current legislation relating to Fitness to Drive (DVLA publication and website) • International Classification of Function & Health model of disablement • Services to support specific rehabilitation objectives (e.g. return to driving and employment or vocational rehabilitation). • Awareness of cultural and religious issues specific to stroke rehabilitation **Skills** • Familiarity with medical assessment for driving skills • Familiarity with medical screening of cognitive skills and appropriate referral to psychologist. • Completion of DVLA forms and social services forms e.g DLA with due regard for patient confidentiality and wishes • Liaison with housing or employers or other relevant bodies • Practice risk assessment as a member of a MDT. • Ability to discuss sensitive issues with patients and carers – eg sexual function	**Experience** • Providing patients with stroke illness appropriate information regarding driving legislation. • Providing patient with appropriate information on issues relating to possible future employment and reintegration into the community. • Take part in a multidisciplinary community assessment of a stroke patient	• Evaluation by direct observation. • Review of case sheets/correspondenc • Reports from member of interdisciplinary team and patients/carers	• Satisfactory training & assessment records • Completed paperwork eg DVLA, DLA forms and written reports

OBJECTIVE D

To understand the components and requirements for a comprehensive stroke service in hospital and the community

SUBJECT MATTER	TEACHING/LEARNING METHOD	ASSESSMENT	EVIDENCE OF COMPETENCE TO BE INCLUDED IN RECORD
Knowledge • Rehabilitation services and planning after hospital • Role of social services, voluntary and independent sectors in stroke services. • Organisation and planning of stroke services • Awareness of national strategies for stroke care **Skills** • Liaison with primary, social and voluntary care • Generic management skills e.g. leadership, negotiating and teamwork. • Presentation skills **Attitudes** • To have an appreciation of the broader community needs and of commissioning perspectives. • Openness to alternative ways of service provision. • Respect for role of other medical and non-medical specialists	**Experience** The following may be of relevance: • Attendance at appropriate stroke service planning committees • Attendance at appropriate courses or conference sessions • Personal study of relevant service framework documents and guidelines	• Evaluation by direct observation. • Reports from members of interdisciplinary team, patients/carers and other relevant contacts	• Satisfactory training & assessment records

3 STROKE PREVENTION

OBJECTIVE A

To be able to undertake an assessment of a patient with suspected TIA

SUBJECT MATTER	TEACHING/LEARNING METHOD	ASSESSMENT	EVIDENCE OF COMPETENCE TO BE INCLUDED IN RECORD
Knowledge • Differential diagnosis of suspected TIA • Thrombophilia and coagulopathies • Appropriate investigations, (e.g. CT, MRI, carotid ultrasound, MRA, echocardiography, cerebral angiography, clotting and thrombophilia tests) • Genetic causes of stroke **Skills** • Appropriate clinical assessment including investigation and management plan. • Communication of risk and impact on lifestyle (driving and occupation) **Attitudes** • Sensitivity to the anxieties provoked by diagnosis.	**Experience** • Specialist neurovascular clinic • Stroke review clinic • Attachment to neurology clinics may be relevant	• Evaluation by direct observation. • Review of case sheets/correspondence • Reports from members of interdisciplinary team and patients/carers	• Satisfactory training & assessment records

OBJECTIVE B

To be able to offer stroke preventive strategies to individuals according to prognosis and need

SUBJECT MATTER	TEACHING/LEARNING METHOD	ASSESSMENT	EVIDENCE OF COMPETENCE TO BE INCLUDED IN RECORD
Knowledge • Epidemiology of risk factors (including ethnicity and novel factors) for cerebral infarction and intracerebral haemorrhage • BHS, NICE, Joint British Society, RCP & SIGN guidelines for treatment of hypertension and hyperlipidaemia • Cost effectiveness of stroke prevention measures. • Principles of management of atrial fibrillation. • Principles of use of antiplatelet drugs • Principles of selection for carotid endarterectomy and stenting • Current research into stroke prevention **Skills** • Assessment of stroke risk in primary and secondary prevention setting. • Develop management plans for secondary prevention • Develop management plans for prevention of stroke due to thrombotic or vasculitic disorders • Treatment to lower blood pressure and lipid levels after stroke. • Selection of patients for anticoagulation • Selection of patients for cerebral angiography following ischaemic stroke and cerebral haemorrhage • Communicating risks and benefits of interventions. **Attitudes** Non-judgmental attitude to lifestyle and age	**Experience** • Neurovascular clinic • Stroke review clinic The following may be relevant: • Attachment to hypertension clinics, anticoagulant/ thrombophilia clinics, vascular surgery, cardiology ▪ Visits to community-based, risk-factor management clinics	• Evaluation by direct observation • Review of case-sheets, correspondence • Reports from Members of Interdisciplinary Team and patients/ carers	▪ Satisfactory training and assessment records