Marklýsing

Sérnám í taugalæknisfræði

Landspítali

Kaflar

1. Sérnám í taugalæknisfræði

Taugalæknisfræði er sú sérgrein læknisfræðinnar sem fjallar um taugasjúkdóma fullorðinna. Nám til sérfræðiréttinda í taugalækningum tekur að minnsta kosti 60 mánuði að loknu kandídatsári með tilvísan í nafn reglugerðar nr. 856/2023. Á taugalækningadeild meðferðarsviðs Landspítala-háskólasjúkrahúss, Reykjavík, býðst 12-36 mánaða upphafssérnám, en sérnámslæknir þarf að ljúka námi erlendis til sérfræðiréttinda í taugalækningum. Byggist uppbygging námsins á marklýsingu evrópsku sérfræðisamtakanna fyrir taugalækningar: https://www.uems-neuroboard.org/web/images/docs/exam/European-Training-Requirements-Neurology-accepted-version-21Oct16.pdf

Umsjón með sérnámi er í höndum kennslustjóra og kennslunefndar, en í henni sitja prófessor í taugalækningum, yfirlæknir á Taugalækningadeild, tveir aðrir taugalæknar og umsjónardeildarlæknir á taugadeild.

2. Umsókn um sérnámsstöðu í taugalæknum á Landspítala

2. 1. Inntökuskilyrði

Umsækjandi skal hafa lokið læknanámi frá Háskóla Íslands eða sambærilegri erlendri læknadeild og hafa lokið starfsnámi (kandídatsári) með tilvísan í reglugerð nr. 467/2015. Umsækjandi skal hafa íslenskt lækningaleyfi. Við ráðningu er Handbók um mannauðsmál sérnámslækna fylgt.

2. 2. Umsókn um sérnámsstöku í taugalæknisfræði

Umsóknir berist til yfirlæknis í taugalækningum. Í kjölfarið fara fram inntökuviðtöl með prófessor og kennslustjóra.

2. 3. Starfshlutfall

Sérnám í taugalækningum miðast við 100% starfshlutfall og þátttöku í vöktum deildarlækna taugadeildar á meðan á námstíma stendur. Minna starfshlutfall getur einnig komið til greina.

3. Uppbygging sérnáms

Um er að ræða 24 mánaða upphafssérnám í taugalæknisfræði. Sérnámið byggir á klínískri vinnu á starfsstöðvum taugalækningadeildar, þátttöku í fundum, teymisvinnu, námsskeiðum og annarri hliðstæðri starfsemi á sviðinu og í tengslum við sérnámið, á þátttöku í vöktum námslækna og skipulagðri menntun samkvæmt námsáætlun.

3.1. Klínísk þjálfun í taugalæknisfræði

Klínísk þjálfun í taugalæknisfræði fer fram á taugalækningadeild á lyflækningaeiningu meðferðarsviðs Landspítala. Námslæknir sinnir þar störfum á legudeild, dag- og göngudeildarvinnu og ráðgjafarþjónustu fyrir bráðamóttöku og aðrar deildir spítalans í samráði við sérfræðilækna taugadeildar. Fyrsta námsárið snýr að undirstöðuatriðum taugalækninga og skal þá námslæknir fá góða þjálfun í sögutöku, taugaskoðun, greiningu og meðferðaráætlun sjúklinga með taugasjúkdóma. Á fyrsta námsári er mest áhersla lögð á legudeildarstörf, dagdeildarþjónustu og ráðgjafarþjónustu en eftir því sem líður á námstímann skal námslæknir fá vaxandi ábyrgð í störfum sínum og sinna flóknari tilfellum.

4. Fræðileg kennsla

Skipulögð fræðsla fyrir sérnámslækna fer fram á taugadeild.

- Tvisvar í viku stýrir sérfræðilæknir kennslu fyrir námslækna. Sú kennsla tekur til fjölbreyttra viðfangsefna í taugalæknisfræði og er að miklu leyti tilfellamiðuð en einnig eru vísindagreinar lesnar og ræddar sem sérnámslæknir kynnir. Sérnámslækni ber að hafa kynnt 15 vísindagreinar í lok námstímans og skrá í logbók.
- Einu sinni í viku stýrir sérfræðilæknir tilfellafundi taugalækna þar sem eitt tilfelli er tekið fyrir. Rætt er við sjúkling og hann skoðaður að viðstöddum læknanemum, námslæknum og sérfræðilæknum taugadeildar. Hver sérnámslæknir skal stýra a.m.k. tveimur slíkum fundum á námstímanum og skrá í logbók. Hann kynnir sér vel sögu og einkenni sjúklings og tekur þátt í umræðu um greiningu og meðferð.
- Vikulega heldur sérnámslæknir fyrirlestur fyrir aðra lækna deildarinnar um tilfelli, sjúkdóm eða vísindagrein. Viðfangsefnið skal hafa tengingu við taugalæknisfræði en sérnámslæknir hefur annars frjáls efnistök. Hver

sérnámslæknir skal halda að minnsta kosti 15 slíka fyrirlestra yfir námstímann og skrá í logbók.

5. Handleiðsla

Hver sérnámslæknir skal hafa einn sérfræðilækni taugadeildar sem handleiðara í gegnum námstímann. Hvern mánuð skal fara fram fundur þeirra í milli. Handleiðslan snýst um að fylgja eftir eðlilegri þróun og þroska í starfi sem og samskiptum við sjúklinga og starfsfólk. Einnig er handleiðslan vettvangur til að ræða möguleika á sérhæfingu, rannsóknum, gæðaverkefnum og þau vandamál og áskoranir sem kunna að koma upp í starfi. Á hverjum fundi skal farið yfir logbók námslæknis og má þannig grípa inn í ef þörf er á þróun á einstaka sviðum. Skal handleiðari hafa sótt handleiðaranámskeið á vegum LSH eða frá annarri viðurkenndri kennslustofnun.

6. Þátttaka í kennslu og fræðslu

Sérnámslæknir skal taka virkan þátt í klínískri kennslu læknanema. Skal sérnámslæknir leitast við að nýta hvert námstækifæri í daglegum störfum og á vöktum. Sérnámslæknir skal einnig taka þátt í skipulagðri kennslu læknanema og skal hver sérnámslæknir hafa umsjón með a.m.k. 8 klíníkum læknanema á námstímanum og skrá í logbók.

7. Rannsóknarvinna

Námslæknar eru hvattir til þátttöku í vísindastarfi meðfram klínísku starfi (sjá logbók). Námslæknir skal hafa staðið fyrir a.m.k. einu gæðaverkefni í lok námstímabils.

8. Markmið sérnámsins (sjá annars marklýsingu frá evrópsku sérfræðisamtökunum)

- Að námslæknir öðlist góða og víðtæka þekkingu á taugasjúkdómum fullorðinna, orsökum þeirra, einkennum, faraldsfræði, gangi og horfum.
- Að námslæknir öðlist góða þekkingu á meðferð og eftirfylgd helstu taugasjúkdóma fullorðinna.
- Að námslæknir geti framkvæmt taugaskoðun og lagt mat á niðurstöður hennar.
- Að námslæknir geti með viðtölum, skoðun og gagnaöflun úr sjúkraskrá aflað fullnægjandi upplýsinga um þá þætti sem skipta máli til sjúkdómsgreiningar.
- Að námslæknir geti skráð góða sjúkrasögu eftir sögu og skoðun þar sem fram kemur túlkun og tillaga að meðferðarplani.
- Að námslæknir geti forgangsraðað verkefnum eftir bráðleika einkenna.
- Að námslæknir hafi góða þekkingu á móttöku sjúklinga með brátt blóðþurrðarslag, þekki vel ábendingar og frábendingar segaleysandi- og innæðameðferðar og geti fylgt verklagi fumlaust og af öryggi.
- Að námslæknir hafi gott vald á mænuholsástungu og geti framkvæmt inngripið án aðstoðar, þekki ábendingar þess, mögulega fylgikvilla og viðbrögð við þeim, ásamt því að geta túlkað niðurstöður rannsóknar. Námslæknir skyldi framkvæma a.m.k. 20 mænuholsástungur yfir námstímann.
- Að námslæknir þekki ábendingar, frábendingar og gagnsemi heilarita, tauga- og vöðvarita og hafi grunnþekkingu í framkvæmd og túlkun slíkra rannsókna.
- Að námslæknir geti átt árangursrík samskipti við sjúklinga og aðstandendur, geti veitt þeim viðeigandi upplýsingar og fræðslu og greint þeim frá erfiðum niðurstöðum.
- Að námslæknir þekki mikilvægi þvegfaglegrar teymisvinnu, sé fær um að vinna í og leiða teymi. Að námslæknir nýti sér krafta annarra starfsstétta á árangursríkan hátt og geti átt góð samskipti við aðrar starfsstéttir.
- Að námslæknir öðlist reynslu af kennslu og þjálfun læknanema og líti á það sem hluta af starfi sínu.
- Að námslæknir sé fær um að semja og halda skipulagðan fyrirlestur þannig að efnið komist vel til skila fyrir lækna, aðrar fagstéttir og almenning.
- Að námslæknir geti nýtt gagnreynda læknisfræði til að leggja mat á fræðilegan grunn ólíkra meðferðarúrræða.

- Að námslæknir temji sér ævilanga símenntun og sjálfsrýni.

9. Mat á framgangi og frammistöðu

9.1. Logbók

Logbók gefur námslækni yfirsýn yfir þá færni sem hann þarf að tileinka sér og hvaða námsþættir það eru sem hann á eftir að ná tökum á. Allir námslæknar eiga að halda úti logbók og fylla í hana vikulega. Auk þessa fyllir námslæknir í rafræna skráningarkerfið REDCap ef einhver af neðangreindum atriðum hafa farið fram. Í hvert skipti er ábyrgur sérfræðingur tilgreindur og gefur hann endurmat í gegnum REDcap kerfið.

Sjúkraskrá sérnámslæknis yfirfarin af sérfræðingi
Taugaskoðun á vakandi sjúklingi í viðurvist sérfræðings
Skoðun meðvitundarlauss sjúklings í viðurvist sérfræðings
Mat á heiladauða í viðurvist sérfræðings
Sérnámslæknir metinn með Mini CEX (observed clinical skills)
Mænuholsástunga framkvæmd
Sjúklingur kynntur á tilfellafundi
Fyrirlestur haldinn fyrir lækna og nema deildarinnar
Kynning á vísindagrein
Taugarit framkvæmt
Vöðvarit framkvæmt
Tauga- og vöðvarit túlkað
Heilarit túlkað
Fundur með handleiðara
Annað, þá tilgreint nánar

Mánaðarlega ræðir námslæknir og/eða fer yfir logbókina og REDCap skráningu ásamt handleiðara sínum.

9.2. Mat

Tvisvar á ári (eins og mælt er með í evrópsku leiðbeiningunum) er lagt mat á framvindu sérnámslæknis með kennslustjóra og handleiðara/völdum sérfræðilækni. Þar er farið yfir logbók og þekking sérnámlæknis könnuð í undirgreinum taugalækninga (sjá logbók).Í viðtali er farið yfir umsagnir frá samstarfsfólki sérnámslæknis sem hann hefur safnað yfir tímabilið, umsagnir skulu koma frá sem flestum starfsstéttum (360-degree multisource feedback, MSF). Tvisvar á ári er sérnámslæknir metinn við að skoða sjúkling (sit-in) og setja upp meðferðaráætlun, matið er framkvæmt af kennslustjóra og handleiðara.

10. Útdráttur úr marklýsingu evrópsku sérfræðisamtakanna fyrir taugalækningar

Introduction

Neurology is medical speciality dealing with the inborn, developmental and acquired, acute and chronic diseases of the central and peripheral nervous system and skeletal muscle at all ages. Neurology covers their diagnosis, the understanding of underlying mechanisms and management. Neurology is a constantly evolving field parallel to the development of the neurosciences and overlaps with numerous other medical specialties, in particular neurosurgery, psychiatry, clinical genetics, paediatrics, rehabilitation, internal medicine and public health.

European Union of Medical Specialists (Union Européenne des Médecins Spécialistes) (UEMS) commits itself to contribute to the improvement of medical training at the European level through the development of European Standards in the different medical disciplines. The European professional advisory organization for neurology is the Section of Neurology of the UEMS (UEMS-SN). It communicates with the executive Bureau of the UEMS and serves in the interest of the various national professional and scientific neurological societies of the European Union and associated countries. The aims of the UEMS-SN with regard to education and training are to ensure that minimal standards for the qualification

of European neurologists are achieved in all European Union and other associated countries.

UEMS provides recommendations for the selection of the candidates to enter postgraduate neurology training and for the requirements for training institutions and for those who are in charge of training in neurology. UEMS recommends that training institutions should have a system of visitation/external peer review. The UEMS-SN recommends and updates standards for, and offers visitations of training institutions at a European level. Having successfully completed a visitation the institution becomes an UEMS-SN accredited department for specialist training in neurology.

This document contains a core curriculum for European residents in adult neurology. The structure of this description follows the format as proposed by the UEMS. The endeavor of this document is to promote high standards of care for patients with neurological conditions throughout the European Union and sets the basic requirements in the domains listed below to enable specialists to move across European country borders for professional purposes.

Training and Lifelong Learning

Neurology is a compulsory part of pregraduate (university) training. Postgraduate training can be divided into specialist residency training and continuous medical education or CME/CPD. This document focuses on the postgraduate training (residency) of neurologists.

Postgraduate level

Postgraduate neurological training comprises a minimum period of 4 years of clinical neurology and at least 1 additional year to be devoted to related disciplines and furthermore, there should be a lifelong participation in continuous medical education/professional development.

A neurology specialist is an individual who has undertaken successfully a recognized program of postgraduate training within neurology. The appointment as a neurologist is made by an institution within the individual's country of

training and takes due note of satisfactory completion of training as required within that country as related to the domains of knowledge, clinical skills, experience and professional behaviors.

Competencies to be acquired in a post-graduate training in Neurology

It is widely accepted that properly going through a consultation process requires knowledge, skills and behaviour. These three abilities come together in the concept 'competency'. The current document summarizes knowledge and skills. The UEMS values professional competence as *'the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served'.*

General Aspects of training

In order to train the most suitable individuals for the medical speciality of neurology, selection principles should be set up on a national basis. The selection procedure must be transparent and application must be open to all persons who have completed basic medical training. A total training time of 5 years including a minimum of 4 years of clinical neurology should be mandatory before achieving full registration as a clinical neurologist. If the director of training agrees that neurology training can be followed part time, the total training time will increase proportionally.

The 4 years of training in clinical neurology should include acute, unselected and planned selected neurological admissions, emergency and intensive care and rehabilitation of neurological patients. Trainees should be exposed to balanced proportions of inpatients and outpatients with a wide spectrum of neurological diseases and have the opportunity to see patients for follow-up.

The training should comprise at least 6 months spent in an outpatient department. Training periods totalling up to 6 months spent in relevant clinical neuro-disciplines like paediatric neurology, emergency and neuro-intensive care, neuro-

rehabilitation or neurosurgery can be considered as belonging to the 4 years of training in clinical neurology.

The additional 5th year (not necessarily chronologically last of the training period) of the total training time may be spent as described in the paragraph above, but also in other specialties such as neuro-radiology, clinical neurophysiology, psychiatry or research relevant for neurology leading to scientific publications

The training and teaching instruments for the training programmes should be in line with the recommendations of modern educational science. The quality of the training may benefit if it takes place in different institutions with rotations within one country or some time spent abroad, provided that all training institutions are nationally certified. The responsible authorities or training institutions should facilitate the rotations and ensure that the rotation system is useful for the trainee's curriculum and avoid unnecessary duplication.

The exact training curriculum is the prime responsibility of the national boards. The training programmes should be in line with the UEMS-SN recommended core curriculum, which undergoes regular updating. The prime aim of the specialty training in neurology is the acquisition of broad neurological knowledge and skills. The development of a particular competence in a subspecialty area of neurology is to be encouraged and could be started during specialty training. As neurologists are often involved in the long-term management of complex chronic disorders, trainees should get acquainted with the concepts of WHO's International Classification of Functioning, Disability and Health (ICF). This is important to be able to take the medical lead in the multidisciplinary team approach while respecting the specific role, knowledge and skills of the other professionals. During the training period a continuous evaluation of knowledge, abilities and skills should be performed and the UEMS-SN recommends that the European Board of Neurology exit exam is taken after completion of the training period as a sign of excellence.

Requirements for Trainees (sérnámslækna)

Entry into the training programme for neurology depends on national regulations and should be transparent. The number of trainees in national programmes should reflect the projected manpower needs in neurology. These depend on the organization of the national health care system and the demographics of the existing neurological manpower, which should be sufficient so that patients with neurological diseases have timely access to specialist care. The trainee must have sufficient linguistic ability to be able to communicate with patients and colleagues. He/she should be able to work in the social and cultural context of the country in which he/she is based. Adequate language, computer and internet skills are basic requirements for accessing and studying the international medical literature and communicating with foreign colleagues. He/she must be able to communicate and work in an interdisciplinary setting. Basic communication skills with patients and carers should have been acquired before entering specialty training and will be subject of continuous professional development. Experience with patient organisations is encouraged. Basic knowledge of scientific methodology, skills in critical interpretation of study results and experience with current methods such as evidence-based medicine are required. The acquisition of organisational skills and knowledge of local medico-legal issues, as well as ethical and palliative issues is encouraged.

Organization of training

1. Schedule of training

A duration of 5 years, with at least 4 years of core neurology training, is recommended. The training period in neurology will be in keeping with EU requirements and is in any case sufficient to ensure that a trainee has met all the required educational and training needs. Specific arrangements for the overall training for any individual trainee would be decided locally and be influenced by relevant national requirements. The list of conditions shown below is a guide to the

knowledge base required of a specialist/consultant. The clinical experience should encompass all common neurological clinical conditions as shown in this list.

At applying for a post in another EU country, the trainee should be able to show the curriculum he actually followed with details about the required nature and extent of clinical experiences, the methods by which a trainee is supported in his/her development and how judgments are made about the progress as regards the development of knowledge and understanding, the progression of his/her clinical work and his/her development as a professional.

2. Curriculum of training

The curriculum is outcome focused but with sufficient flexibility to allow personal development distinguished by the needs of the individual, the centre in which he/she is training and the country where this takes place. Training should include teaching skills for generic competences and neurology specific competences.

Thus, the curriculum would be based on the following principles. A European Neurologist would:

- be a pluripotent specialist and a multi-system disease expert
- be competent in history taking, physical examination, management and continuing care of patients with common and a number of other neurological conditions
- communicate effectively with patients, their families and with professional collaborators
- be able to practice evidence-based care
- be able to practice cost-effective care
- understand the nature of and degree of risk taken in his/her clinical practice
- maintain the quality of his/her practice by being aware of personal developments
- undertake multi-disciplinary team (MDT) work
- provide clinical leadership

- provide ability to work as part of a multi- disciplinary team
- demonstrate a lifelong commitment to reflective learning
- promote the health and well-being of individual patients, communities, and populations
- have an understanding of specialty-based Public Health
- be able to teach and support trainees
- be committed to the health and well-being of individuals and society through profession-led regulation and high standards of personal behavior and clinical practice
- have a portfolio of evidence that he/she has achieved the above goals; especially should there be a wish to seek employment in a country different from the country of training.

Different countries will have different approaches to achieve these outcomes but the evidence that they have been achieved should be increasingly of a homogeneous nature that facilitates the learning and experiences of trainees, the engagement of clinical supervisors and ease of recognition of progress and achievements across EU member countries.

3. Support of trainees

A trainer on location will supervise a trainee's clinical work. The trainer will be responsible for providing the trainee with regular feedback as regards his/her their performance and guidance in matters related to the clinical care that they are delivering. Additionally it is recommended to link every trainee to a mentor, who will follow the trainee during the whole period of training for monitoring progress with help of a continuing portfolio and adjusting it if necessary. All training programs in neurology will be led in an institution (or in a group or network of allied institutions) by a Program Director.

While actively cultivating traditional teaching such as regular grand rounds and weekly structured teaching sessions, training institutions should be proactive in introducing new training methods according to the modern principles of adult

learning. A programme of formal bleep-free regular teaching sessions to cohorts of trainees could include:

- Case presentations
- Lectures and small group teaching
- Grand Rounds
- Clinical skills demonstrations and teaching
- Critical appraisal and evidence based medicine and journal clubs
- Research and audit projects
- Joint specialty meetings

Trainees will meet with their Program Director on a regular basis, which typically would be every six months, to discuss his/her work. Such discussions will take the format of an appraisal with the trainee providing information about how he/she is progressing, accompanied by documented evidence of clinical engagement and achievement of learning and training outcomes. The purpose of the appraisal is to enable a constructive discussion about how the learning needs of the trainee should be met. Subsequent appraisals will revisit earlier appraisals to determine progress in achieving these needs. The appraisals are not part of any summative assessment process but are designed entirely to support the trainees.

4. Assessment and evaluation

Training institutions should provide a system of appraisal – at entry into every part of the programme, at mid point and at the end. A structured goal setting for each training period according to the curriculum at its evaluation is recommended.

All trainees should keep a logbook to record their clinical activity – emergency admissions, ward work and outpatients seen. This ensures that the trainees and their supervisors can identify areas of the curriculum that have not been covered.

In addition it is recommended that the trainee documents the following structured assessments:

- Mini CEX (observed clinical skills)
- DOPS (directly observed procedural skills, e.g. lumbar puncture)
- Case based discussions
- Multisource feedback (from colleagues, nurses and other professionals)
- Patient feedback from in- and outpatients

The minimal numbers per year of each of these items should be determined nationally.

Clinical experience will be assessed by a review of the patients seen by a trainee and for whom the trainee has had a personal responsibility as regards care. Evidence of such engagement will be maintained in a clinical log-book or equivalent.

Professional behavior should be part of the assessment strategy, typically a 360-degree multisource feedback (MSF) would take place at intervals to be defined locally. The Program Director would be central to the discussion and reflection undertaken after each MSF and provide guidance and support in response to comments made by those providing the MSF to a trainee. The trainee could do additional MSFs if the initial MSF demonstrated a less than adequate performance. Local standards as regards an individual's suitability for clinical practice would determine whether or not a trainee was employable as a consultant/specialist.

Research. Trainees will be expected to develop an understanding of research methodology and to be able to evaluate publications. They should keep a record of the articles presented and ideally of their posters presented and their articles published.

5. Governance

The governance of an individual's training program will be the responsibility of the Program Director and the institution(s) in which the training program is being

delivered. A trainer will be responsible to the Program Director for delivering the required training in this/her area of practice.

Training requirements for trainers (handleiðara)

1. Process of recognition as trainer

a. Required qualification and experience

A trainer would be a registered medical practitioner and as a neurology specialist/consultant within his/her own country. He/she will have satisfied any relevant national requirements as regards accreditation/appraisal/training to be a trainer. A Program Director would be someone who has been or still is a trainer and who has considerable knowledge and experience in training doctors. Trainers and Program Directors must be in active clinical practice and engaged in training in the training centre or network.

The director of training should be a (have been) practising neurologist for at least 5 years after specialist accreditation, have a sound practical knowledge of the whole field of neurology and must be recognised by the national monitoring authority. The medical staff acting as educational supervisors should be actively practising neurology and devoted to residency training.

b. Core competencies for trainers

A trainer will be:

1. Familiar with all aspects of the overall neurology curriculum as it relates to practice within his/her country.

2. Experienced in teaching and in supporting learners.

3. Skilled in identifying the learning needs of the trainees and in guiding the trainees to achieve their educational and clinical goals.

4. Able to recognize trainees whose professional behaviors are unsatisfactory and initiate supportive measures as needed.

5. Trained in the principles and practice of medical education and follow regular updating in educational and team leader skills.

2. Quality management for trainers

Trainers and Program Directors should have their job description agreed with their employer which will allow them sufficient time for support of trainees and in the case of Program Directors, sufficient time for their work with trainers. A trainer should not have more than four trainees. The number of trainees would determine the amount of time that would be allocated to their support.

Trainers will collaborate with trainees, the Program Director and their Institution to ensure that the delivery of training is optimal. They should meet at least twice a year with all trainees to openly discuss all aspects of training including the evaluation and approval of their log books and portfolios.

The educational work of trainers and Program Directors should be appraised annually within their Department/Institution. Educational support of trainers and Program Directors will be provided by their Department and Institution and through the Section and Board of Neurology of UEMS.

Training requirements for training institutions

1. Recognition as training centre

a. Requirement on staff and clinical activities

A ‘Training Center’ is a place or number of places where trainees are able to develop their neurological competences. Such provision may include sites, which are condition specific and thus not offer a wide clinical experience such as that provided by a large centre. Thus, neurology training may take place in a single institution or in a network of institutions working together to provide training in the full spectrum of clinical conditions and skills detailed in the curriculum. This should include a hospital or institution that provides academic activity and is also

recognized for training in internal medicine and surgery. Each participating institution in a network must be individually recognized at national level as a provider of a defined section of the curriculum.

Within a training centre there would be a number of specialist/consultant neurologists (trainers) able to supervise and personally train a trainee. Whilst the trainer will not manage patients with all the diagnoses listed above, he/she will be able to ensure, by working with the Program Director and other local trainers that the clinical experience of the trainee will prepare them for clinical work as a specialist.

It is essential that as part of their training, trainees will be responsible for caring for patients on both an emergency and routine basis. This may need the involvement of multiple training sites. The trainee should be involved in the management of new patients, the follow up of outpatients and inpatient care.

A trainee must have progressively increasing personal responsibility for the care of patients with neurological conditions and retain general medical skills to be able to identify in patients who present to a neurology service underlying clinical problems that are not neurological. The staff of a training center will engage collaboratively in regular reviews of the center's clinical activity and performance. There will be regular multidisciplinary meetings to determine optimal care for patients and such meetings will involve both medical and other healthcare staff. There will be clinical engagement outside of the centre with other clinical groups such as rehabilitation medicine, orthopedics, pediatrics, neurosurgery, immunology, cardiology, pneumology, geriatrics and rheumatology.

Within a training centre for neurology, there should be a wide range of clinical services available so that a trainee will be able to see and contribute to the care of all common neurological problems. In addition, the patient numbers and specialist numbers should be sufficient that trainees will be able to be instructed and supervised in the clinical procedures required for a specialist. The balance between inpatient and outpatient numbers is constantly changing as neurology becomes more outpatient based. Thus, no specific in- or outpatient numbers are stated as being necessary to be seen by a trainee during their training. Specialist staff

members appointed to a training centre will have completed all training requirements themselves and will have been trained also in teaching and mentoring a trainee. Specialists already in post will undertake training, if they have not already completed this, to enable them to support trainees optimally. Such training and maintenance of skills and knowledge in this area will be part of their job-plan and subject to appraisal (see above).

It is recommended that a trainee will not have only one trainer during their entire training period. A trainee should have a number of named trainers with whom he/she works on a day-to-day basis. Each trainer would cover different aspects of a trainee's clinical training but this individual will not be the only person who will provide educational support for a trainee. (See above for comments about the Program Director and his/her role). In addition to medical staff supporting a trainee's development it is likely that non-medical members of staff will also be engaged. The specialists in a training centre probably represent a wide range of neurological expertise and have to demonstrate that they remain up-to-date with their clinical practice, knowledge and educational skills.

It is not a requirement that a training center is also an academic centre for neurology but it is desirable that a training centre would have strong academic links and contribute to research.

b. Requirement on equipment, accommodation

A training centre would need to have sufficient equipment and support to enable the clinical practice that would be expected of a training centre and thus provide the necessary educational opportunities for trainees. Trainees would have suitable accommodation for their work. Computing and Information Technology and library resources must be available. All trainees must engage in clinical audit and have the opportunity to engage in research.

2. Quality management within training institutions

a. Accreditation

Training centers would be recognized within their own country as being suited for their task and for being suitable for the care of patients with a wide range of neurological conditions. It would be expected that training centers would be subject to regular review within their country and this would include data relating to the progress of trainees and their acquisition of specialist accreditation.

b. Clinical Governance

Training centers should undertake internal audits of their performance as part of the requirements for continuing national recognition/accreditation. Any national evaluation of a training center's performance is expected to include the demonstration that it is:

1. Providing care for patients with a wide range of neurological conditions

2. Providing educational and training support for trainees and others 3.

Part of a healthcare system that provides immediate access to relevant laboratory and other investigations as well as providing when necessary immediate access to other clinical specialties that may be required by their patients.

Training centers should keep records of the progress of their trainees, including any matters relating to Fitness to Practice or other aspects that might affect a trainee's registration with the relevant national body. The Program Director has specific responsibilities in this regard.

c. Transparency of training programs

It would be expected that a training centre would publish details of the training provision available with details of the clinical service it provides and the specialist and other staff. Such information would include the training program, the nature of the clinical experiences with which a trainee would be engaged and the support and interaction with the trainer and Program Director. There would be a named individual whom a prospective trainee might contact and discuss the program.

1. General Competencies

To be appointed as a specialist an individual should show a level of competence sufficient to allow independent clinical practice and to be able to care for patients both in acute and chronic situations. Such a level of performance may vary from country to country and from post to post but the lists and competencies in this document describe the basic requirements one would expect of a 'European Neurologist'.

In addition to the knowledge and skills in practical procedures detailed below an applicant for a specialist post in Neurology would be expected to show evidence of having been personally and continuously involved with the care of patients with a wide a range of common neurological problems as possible. A European specialist in Neurology should be well informed in research principles: principles and methods of epidemiological research, principles of clinical research, evidence-based medicine, data analysis and medical informatics, laboratory techniques, ethical aspects of clinical and basic research, critical appraisal. A 'European Neurologist' would be expected to demonstrate professional behavior, in keeping with the requirements of his/her country's medical registry/statutory body. A 'European Neurologist' would be in good standing with his/her relevant National Registration Body.

2. Specific Competencies

a. Theoretical and clinical knowledge

Knowledge of basic science includes:

- Anatomy and biology of the central and peripheral nervous system as well as of the musculoskeletal system.
- Immunology
- Neurobiology of pain
- Pharmacology

- Neurophysiology
- Genetics
- Neurochemistry
- Epidemiology
- Research methodology
- Ethics and Law
- Principles of Public and Global Health

By the time an individual is appointed as a specialist he/she would be expected to have the following armentarium:

- Knowledge and understanding of the relevant medical sciences, public health sciences, pathophysiology and principles of management and care of patients with any of the core clinical conditions
- Ability to indicate and interpret diagnostic testing: laboratory test, diagnostic imaging techniques, test performance characteristics.
- An understanding of the modes of action and potential adverse effects of therapies and experience in advising patients about the risks and benefits of such therapies.
- Ability to analyze and utilize research finding in neurology so that his/her clinical practice is, as far as possible, based upon evidence.
- Be able to provide evidence that the/she is maintaining his/her general medical as well as neurological knowledge at a sufficient level to ensure a high standard of clinical practice.
- An understanding of the healthcare system(s) within the country of training.
- Be prepared for his/her role as future clinical leader.

- Be able to be an effective member and a leader of a multidisciplinary team

Specific Learning Objectives in Neurology

For all of the diseases in this paragraph the following issues should be considered.

- Anatomy and pathophysiology
- Clinical semiology
- Clinical course
- Comorbidity
- Disability
- Epidemiology
- Radiological and neurophysiological aspects
- Psychological and behavioural aspects

and furthermore as far as relevant:

- Pharmacological therapy
- Non-pharmacological interventions
- Diagnosis and management of treatment complications
- Rehabilitation
- Psychological care
- Genetics and counseling
- Primary prevention
- Secondary prevention

Regarding the following we refer to the European Training Requirements for Neurology https://www.uems-neuroboard.org/web/images/docs/exam/European-Training-Requirements-Neurology-accepted-version-21Oct16.pdf:

- *Specific learning objectives* (pages 18-24)

- *Learning objectives in laboratory Investigations* (pages 25-26)

- *Interdisciplinary aspects* (pages 27-29)

- *Problems to be recognized and addressed* (pages 30-33)

- *Skills in Neurology* (pages 34-35)

Appendix

Record of clinical work and clinical skills

Many trainees already keep a record or have a record kept automatically of patients for whom they have provided care. It is not proposed as a requirement of becoming a European Neurologist that any additional record should be kept but when a doctor seeks to gain employment in an EU country other than his/her own (or the one in which he/she has been trained) he/she will be required to provide access to appropriate records (logbook) demonstrating the extent and nature of his/her clinical experience and skills to a future potential employer and any other relevant body (for example a statutory medical body that grants employment rights within a country).

Independent confirmation of progress of a trainee (or of work as a specialist)

Doctors seeking to gain employment in a country other than their own or the country in which they have been trained will be required to provide references that provide details about:

1. The curriculum that the trainee has followed

2. The nature of assessments completed by the trainee and the outcomes of any assessments undertaken by him/her

3. The outcomes of assessments of a trainee’s professional behaviors

4. The good standing of the trainee

5. The nature of the quality assurance processes by which it is known locally that the quality of the curriculum and its delivery are satisfactory

6. As regards a specialist seeking to work in another country, references will be required to contain confirmation regarding an individual’s clinical experience and good-standing, including outcomes of any assessments of professional behaviors.