JRCPTB
Joint Royal Colleges of Physicians Training Board

Rough Guide to Implementation
Clinical Neurophysiology Curriculum
Guidance for training programme directors,
supervisors and trainees
August 2021

ROYAL COLLEGE
of PHYSICIANS
of EDINBURGH

ROYAL COLLEGE OF
PHYSICIANS AND
SURGEONS OF GLASGOW

Royal College
of Physicians

Contents

Introduction

This guide for Clinical Neurophysiology is to help training programme directors (TPDs), supervisors, trainees and others with the practicalities of implementing the new curriculum. It is intended to supplement rather than replace the curriculum document itself. The curriculum, ARCP decision aid and this guide are available on the JRCPTB website.

The Rough Guide has been put together by members of the Clinical Neurophysiology SAC with additional help from many external stakeholders especially trainees. It is intended to be a 'living document' and we value feedback via curriculum@jrcptb.org.uk.

What is different about the 2021 Clinical Neurophysiology curriculum?

Background

There have been two major drives to the need for change. Firstly the move away from the 'tick-box' approach associated with the current competency-based curricula, to the holistic assessment of high level learning outcomes. The new curriculum has a relatively small number of 'capabilities in practice' (CIPs) which are based on the concept of entrustable professional activities (EPAs). Secondly, the GMC has mandated that all postgraduate curricula must incorporate the essential generic capabilities required by all doctors as defined in the Generic Professional Capabilities (GPC) framework..

Duration of training

Clinical Neurophysiology higher specialty training will usually be completed 4 years of full-time training. There will be options for those trainees who demonstrate exceptionally rapid development and acquisition of capabilities to complete training sooner than the indicative time. There may also be trainees who develop more slowly and will require an extension of training as indicated in the Reference Guide for Postgraduate Specialty Training in the UK (The Gold Guide).

The Clinical Neurophysiology curriculum

The purpose of the curriculum is to produce doctors with the generic professional and specialty specific capabilities required to practice in Clinical Neurophysiology. It aims to give them the underlying knowledge, skills and behaviours required for a Consultant Physician working within the modern NHS and will also ensure that the trainee develops the full range of speciality-specific core capabilities, together with areas of advanced practice covering neuromuscular techniques, EEG and EPs.

The objectives of the curriculum are:

- to set out a range of specific professional capabilities that encompass all knowledge, skills and activities needed to practice clinical neurophysiology at consultant level
- to set expected standards of knowledge and performance of various professional skills and activities at each stage
- to suggest indicative training times and experiences needed to achieve the required standards
- to indicate how the professional capabilities will be assessed.

Scope of Practice

Clinical Neurophysiology requires diagnostic reasoning and the ability to combine neurophysiological data with the clinical picture; and to be able to communicate diagnostic information to colleagues in other specialties. Clinical Neurophysiologists need the ability to work within, or as leaders of, teams and systems involving other healthcare professionals to effectively provide optimal patient care. They need to be able to provide service for neonates, children and adults.

Clinical Neurophysiologists have a wide variety of opportunities for research and the training is designed to facilitate opportunities for academic careers.

Clinical Neurophysiology trainees will have developed a number of core capabilities incorporating electroencephaography (EEG), nerve conduction studies (NCS) and electromyograohy (EMG) techniques, and Evoked Potentials. They will also develop capabilities in advanced EEG (including ambulatory EEG, video telemetry, electrocorticography and sleep studies), advanced EMG (including single fibre EMG, autonomic testing, quantitative sensory testing, transcranial magnetic stimulation, and quantitative EMG) and advanced EP (including electroretinography, somatosensory evoked potentials and intraoperative monitoring). Some consultants practice in just one specialist area, but for the majority, clinical practice combines a mixture of the capabilities taught with both adults and children and it is necessary to gain experience in the whole curriculum.

Doctors in training will learn in a variety of settings using a range of methods, including workplace-based experiential learning, formal postgraduate teaching and simulation-based education.

By the end of their final year of training, the trainee will receive a CCT in Clinical Neurophysiology.

Capabilities in Practice (CiPs)

The **generic CiPs** cover the universal requirements of all specialties as described in the GPC framework. The generic CiPs are common across all physician specialties. Assessment of the

generic CiPs will be underpinned by the GPC descriptors. Satisfactory sign off will indicate that there are no concerns.

The **specialty CiPs** describe the professional tasks or work within the scope of Clinical Neurophysiology.

Each CiP has a set of descriptors associated with that activity or task. Descriptors are intended to help trainees and trainers recognise the minimum level of knowledge, skills and attitudes which should be demonstrated for an entrustment decision to be made.

By the completion of training and award of CCT, the doctor must demonstrate that they are capable of unsupervised practice (level 4) in all specialty CiPs.

Capabilities in practice (CiPs)

Generic CiPs
1. Able to successfully function within NHS organisational and management systems
2. Able to deal with ethical and legal issues related to clinical practice
3. Communicates effectively and is able to share decision making, while maintaining appropriate situational awareness, professional behaviour and professional judgement
4. Is focussed on patient safety and delivers effective quality improvement in patient care
5. Carrying out research and managing data appropriately
6. Acting as a clinical teacher and clinical supervisor to be assessed by DOPS

Specialty CiPs
1. Managing and delivering a basic adult and paediatric NCS / EMG service
2. Managing and delivering a basic adult and paediatric Electroencephalography (EEG)service
3. Managing and delivering a basic adult and paediatric Evoked Potentials (EP) service
4. Managing and delivering an advanced adult and paediatric adult and paediatric EMG service
5. Managing and delivering an advanced adult and paediatric Evoked Potential service
6. Managing and delivering an advanced adult and paediatric adult and paediatric EEG service

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Detail regarding each CiP can be seen in the curriculum.

Evidence of capability

The curriculum describes the evidence that can be used by the educational supervisor to make a judgement of the trainee's capability (please see the CiPs tables and the assessment blueprint). The educational supervisor will make a holistic judgement based on the evidence provided, particularly the feedback from clinical supervisors and the multi disciplinary team. The list of evidence for each CiP is not exhaustive and other evidence may be equally valid.

Presentations and Conditions

The curriculum provides guidance on the presentations and conditions which form the clinical context in which the capabilities are demonstrated. The presentation and conditions listed are either common or serious, and trainees will be expected to know about these but they will not need to be signed off for individual items.

Specialty and system	Presentations	Conditions/Issues
Nerve conduction study and electromyography	Spinal cord disease	Anterior horn cell disorders
	Nerve root disease	Radiculopathies
	Disorders of plexi	Brachial and Lumbosacral plexopathies
	Disorders of peripheral nerves	Axonal neuropathies, demyelinating neuropathies, entrapments, nerve injuries
	Disorders of the neuromuscular junction	Myaesthenic syndromes, botulism
	Disorders of muscle	Genetic, metabolic, inflammatory, channelopathies
	Disorders of the autonomic nervous system	
Electroencephalography	Seizures	Focal and generalised epilepsies Epileptic Encephalopathies Status epilepticus Non-organic seizures
	Disorders of consciousness	Coma Encephalopathy
	Organic brain disease	Creutzfeldt-Jakob Disease
	Sleep disorders	
	Preparation for epilepsy surgery	Intracranial and extracranial recordings
Visual evoked potentials	Visual impairment	Neuroinflammatory disorders, Optic nerve compression, Chiasmal misrouting

Specialty and system	Presentations	Conditions/Issues
Electroretinography	Visual impairment	Retinopathies, maculopathies, psychogenic disease
Somatosensory evoked potentials	Hypoxic brain injury	
	Dorsal column disorders	
	Intraoperative monitoring for spinal and cranial surgery	Scoliosis
Brainstem auditory evoked potentials	Disorders of brainstem and vestibulocochlear function	Neuro-inflammatory disorders, metabolic disorders,
Transcranial magnetic stimulation	Disorders of motor pathways	

Practical Procedures

The curriculum lists the practical procedures required and the minimum level of competency.

Once a trainee is competent to perform a procedure unsupervised (as evidenced by 2 summative DOPS and a completed log book of appropriate activity) they will not need further assessment. It is a matter of professional insight and probity that a trainee should maintain their competency by carrying out the procedure when the opportunity arises. If a trainee has not performed a particular procedure for some time and no longer feels confident or competent to carry it out, then they should seek further training with appropriate supervision. Trainers should have ongoing conversation with trainees about procedural competence and this should be documented.

Assessment: What is required from trainees and trainers?

Introduction

Decisions about a trainee's competence progression will be based on an assessment of how they are achieving their CiPs. For the generic CiPs it will be a straightforward statement as to whether they are operating at, above, or below level expected for the current year of training. For the specialty CiPs there will be a judgement made at what level of supervision they require (i.e. unsupervised or with direct or indirect supervision). For each of these CiP there is a level that is to be achieved at the end of each year in order for a standard outcome to be achieved at the Annual Review of Competence Progression (ARCP). The levels expected are given in the grid below and in the ARCP decision aid.

What the trainee needs to do

They still need to do an appropriate number of supervised learning events (SLEs) and workplace based assessments (WPBAs). The requirements are documented in the ARCP decision aid (see ARCP section below) but it should be appreciated by trainer and trainee that the decision aid sets out the absolute minimums. SLEs and formative DOPS are not pass/fail summative assessments but should be seen by both trainer and trainee as learning opportunities for a trainee to have one to one teaching and receive helpful and supportive feedback from an experienced senior doctor. Trainees should therefore be seeking to have SLEs performed as often as practical. They also must continue to attend and document their teaching sessions and must continue to reflect (and record that reflection) on teaching sessions, clinical incidents and any other situations that would aid their professional development. They should record each procedure performed in a logbook to demonstrate that they have performed the requisite indicative numbers.

Each trainee must ensure that they have acquired multi-source feedback (MSF) on their performance each year and that this feedback has been discussed with their Educational Supervisor (ES) and prompted appropriate reflection. They also need to ensure that they have received a minimum of 3 reports from consultants who are familiar with their work and who will contribute to the Multiple Consultant Report (MCR). Each consultant contributing to the MCR will give an advisory statement about the level at which they assess the trainee to be functioning for each clinical CiP.

As the ARCP approaches, trainees need to arrange to see their ES to facilitate preparation of the ES report (ESR). They will have to self-assess the level at which they feel they are operating at for each CiP. In an analogous fashion to the MSF, this self- assessment allows the ES to see if the trainee's views are in accord with those of the trainers and will give an idea of the trainee's level of insight.

Interaction between trainer and trainee

Regular interaction between trainees and their trainers is critical to the trainee's development and progress through the programme. Trainees will need to engage with their clinical and educational supervisors.

At the beginning of the academic year there should be a meeting with the ES to map out a training plan for the year. This should include;
- how to meet the training requirements of the programme, addressing each CiP separately
- a plan for taking the Knowledge based assessment
- a discussion about what resources are available to help with the programme
- develop a set of SMART Personal Development Plans (PDPs) for the training year
- a plan for using study leave
- use of the various assessment/development tools

The trainee should also meet with the clinical supervisor (CS) to discuss the opportunities in the current placement including;

- develop a PDP including SMART objectives for the placement
- access to clinics and how to meet the learning objectives
- expectations for inpatient experience

Depending on local arrangements there should be regular meetings (we recommend approximately one hour most weeks) for personalised, professional development discussions which will include;

- writing and updating the PDP
- reviewing reflections and SLEs
- reviewing MCR and other feedback
- discussing leadership development
- discussing the trainee's development as a physician and career goals
- discussing things that went well or things that went not so well

Self-assessment

Trainees are required to undertake a self-assessment of their engagement with the curriculum and in particular the CiPs. This is not a 'one-off' event but should be a continuous process from induction to the completion of the programme and is particularly important to have been updated ahead of the writing of the ES report and subsequent ARCP. Self-assessment for each of the CiPs should be recorded against the curriculum on the trainee's ePortfolio account.

The purpose of asking trainees to undertake this activity is:

- To guide trainees in completing what is required of them by the curriculum and helping to maintain focus of their own development. To initiate the process it is important that the induction meeting with a trainee's ES reviews how the trainee will use the opportunities of the coming academic year to best advantage in meeting the needs of the programme. It will allow them to reflect on how to tailor development to their own needs, over-and-above the strict requirements laid out in the curriculum
- To guide the ES and the ARCP panel as to how the trainee considers they have demonstrated the requirements of the curriculum as set out in the Decision Aid and where this evidence may be found in the trainee's portfolio. This will help the ARCP panel make a more informed judgement as to the trainee's progress and reduce the issuing of outcome 5s as a result of evidence not being available or found by the panel

What the Educational Supervisor (ES) needs to do

The educational supervisor and trainee should meet beforehand to plan what evidence will need to be obtained. This can be used by the ES to write an important and substantial ES report (ESR).

The ESR will be the central piece of evidence considered by the ARCP Panel when assessing whether the trainee has attained the required standard as set out in the Decision Aid. As such, both time and planning will need to be given to writing it; this process will need to start at the beginning of the training year.

Educational Supervisor Report (ESR)

The ESR should be written ahead of the ARCP and discussed between the supervisor and the trainee before the ARCP, with any aspects likely to result in a non-standard outcome at ARCP made clear. This conversation should be documented. The report documents the entrustment decisions made by the supervisor for all the CiPs set out in the curriculum. The decisions should be based on evidence gathered across the training year as planned at the Induction Meeting with the trainee and modified through subsequent, regular, professional development meetings. The evidence should be gathered from several sources as appropriate for the particular CiP.

In completing the ESR, assessments are made for each **generic CiP** using the following anchor statements:

Below expectations for this year of training; may not meet the requirements for critical progression point
Meeting expectations for this year of training; expected to progress to next stage of training
Above expectations for this year of training; expected to progress to next stage of training

Comments must be made, as a minimum, for any rating of below expectation. It is good practice to narrate all decisions. The narration should include;
- Source of the evidence and its context, outlining contradicting evidence if appropriate
- Examples (of statements)
- Direction for future development/improvement

For the **specialty CiPs**, the ES makes a judgement using the levels of entrustment in the table below.

Level 1: Entrusted to observe only – no provision of clinical care
Level 2: Entrusted to act with direct supervision: The trainee may provide clinical care, but the supervising physician is physically within the hospital or other site of patient care and is immediately available if required to provide direct bedside supervision
Level 3: Entrusted to act with indirect supervision: The trainee may provide clinical care when the supervising physician is not physically present within the hospital or other site of patient care, but is available by means of telephone and/or electronic media to provide advice, and can attend at the bedside if required to provide direct supervision
Level 4: Entrusted to act unsupervised

Only the ES makes entrustment decisions. Detailed comments must be given to support entrustment decisions that are below the level expected. As above, it is good practice to provide a narrative for all ratings given.

Important Points

- Plan the evidence strategy from the beginning of the training year
- Write the report in good time ahead of the ARCP
- Discuss the ESR with the trainee before the ARCP
- Give specific, examples and directive narration for each entrustment decision

Types of Evidence

Local Faculty Groups (LFG)/ Specialty Training Committees

This type of group has been recommended in training previously but is not universally implemented. If available this should be a group of senior clinicians (medical and non-medical) who get together to discuss trainees' progress. The purpose is not only to make an assessment of a trainee but to determine and plan on-going training. It is recommended again as an optimal way of providing information about trainees' progress.

The LFG set-up will depend on the circumstances of the organisation. In smaller units the LFG make include all the physicians; while in larger units there may be several LFGs, each in a different department. In all circumstances, as a minimum, an LFG must be able to consider, direct and report on the performance of trainees in the acute medicine/on-call setting.

The LFG should meet regularly to consider the progress of each trainee and identify training needs, putting in place direction as to how these needs are to be met. This should be documented and communicated to trainee's Educational Supervisor and hence to the trainee. A mechanism for this to happen should be established.

Multi-Source Feedback (MSF)

The MSF provides feedback on the trainee that covers areas such as communication and team working. It closely aligns to the Generic CiPs. Feedback should be discussed with the trainee. If a repeat MSF is required it should be undertaken in the subsequent placement.

Multiple Consultant Report (MCR)

The MCR captures the views of consultant (and other senior staff) based on observation of a trainee's performance in practice. The MCR feedback gives valuable insight into how well the trainee is performing, highlighting areas of excellence and areas of support required.

The *minimum* number of MCRs considered necessary 3

Consultant supervisors completing the MCR will use the global anchor statements [meets, below or above expectations] to give feedback on areas of clinical practice. If it is not possible for an individual to give a rating for one or more area they should record 'not observed'. Comments must be made, as a minimum, for any rating of below expectation. It is good practice to narrate all decisions. The narration should include:

- Source of the evidence and its context, outlining contradicting evidence if appropriate
- Examples (of statements)
- Direction for future development/improvement

Supervised Learning Events

Case based Discussion (CbD)
This tool is designed to provide feedback on discussions around elements of the care of a particular patient. This can include elements of the particular case and the general management of the condition. It is a good vehicle to discuss management decisions.

Mini-Clinical Evaluation (mini-CEX)
This tool is designed to allow feedback on the directly observed management of a patient and can focus on the whole case or particular aspects.

Workplace-Based Assessments

Direct Observation of Procedural Skill (DOPS)
This tool is designed to give feedback and assessment for trainees on how they have undertaken a procedural skill. This may be in a simulated or real environment. Formative DOPS may be undertaken as many times as the trainee and supervisor feel is necessary. A trainee can be signed off as able to perform a procedure unsupervised using the summative DOPS.

Teaching Observation (TO)
The TO form is designed to provide structured, formative feedback to trainees on their competences at teaching. The TO form 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).

Quality Improvement Project Assessment Tool (QIPAT)
The QIPAT is designed to assess a trainee's competence in completing a quality improvement project. The QIPAT can be based on a review of quality improvement documentation or on a presentation of the quality improvement project at a meeting. If possible, the trainee should be assessed on the quality improvement project by more than one assessor.

Guidance on how to assess QI skills and behaviours has been developed by the Academy of Medical Royal Colleges and is available via this link.

Examination

A formative Knowledge based assessment will be performed in St4, St5 and St6. This will not be a pass/fail exercise, but an opportunity to be able to identify gaps in knowledge to inform the personal development plan.

Reflection

Undertaking regular reflection is an important part of trainee development towards becoming a self-directed professional learner. Through reflection a trainee should develop SMART learning objectives related to the situation discussed. These should be subsequently incorporated into their PDP. Reflections are also useful to develop 'self-knowledge' to help trainees deal with challenging situations.

It is important to reflect on situations that went well in addition to those that went not so well. Trainees should be encouraged to reflect on their learning opportunities and not just clinical events

Suggested evidence for each CiP

The suggested evidence to inform entrustment decisions is listed for each CiP in the curriculum and ePortfolio. However, it is critical that trainers appreciate that trainees do not need to present every piece of evidence listed and the list is not exhaustive and other evidence may be equally valid.

Induction Meeting with ES: Planning the training year

Writing the ESR essentially starts with the induction meeting with the trainee at which the training year should be planned. The induction meeting between the ES and the trainee is pivotal to the success of the training year. It is the beginning of the training relationship between the two and needs both preparation and time. The induction meeting should be recorded formally in the trainee's ePortfolio. The meeting should be pre-planned and undertaken in a private setting where both can concentrate on the planning of the training year. This is also a time for ES and trainee to start to get to know each other.

Ahead of the meeting review:
- Review Transfers of Information on the trainee
- Review previous ES, ARCP etc. reports if available
- Agree with the placement CSs how other support meetings will be arranged. Including;
  - Arrangements for LFGs or equivalent
  - Arrangements for professional development meetings

At the meeting the following need to be considered:

- Review the placements for the year
- Review the training year elements of the generic educational work schedule or its equivalent
- Construct the personalised educational work schedule for the year or its equivalent
- Construct the annual PDP and relevant training courses
- Discuss the trainee's career plans and help facilitate these
- Discuss the use of reflection and make an assessment of how the trainee uses reflection and dynamic PDPs
- Discuss the teaching programme
- Discuss procedural simulation
- Discuss procedural skill consolidation
- Discuss arrangements for LTFT training if appropriate
- Plan additional meetings including the professional development meetings and the interaction with the placement CSs
- Planning of SLEs and WPBA
- Arrangements for MSF
- Review the ARCP decision aid
- Arrangements for Interim Review of Competence Progression (IRCP)
- Arrangements for ARCP and the writing and discussion of the ESR
- Pastoral support
- Arrangements for reporting of concerns
- Plan study leave

At the end of the meeting the trainee should have a clear plan for providing the evidence needed by the ES to make the required entrustment decisions.

Important Points
- Prepare for the meeting
- Make sure that knowledge of the curriculum is up-to-date
- Set up a plan for the training year

Induction Meeting with Clinical Supervisor (CS)

The trainee should also have an induction meeting with their placement CS (who may also be their ES). The meeting should be pre-planned and undertaken in a private setting where both can concentrate on the planning of the placement. This is also a time for CS and trainee to start to get to know each other.

Ahead of the meeting review the following should be considered;
- Review Transfers of Information on the trainee
- Review previous ES, ARCP etc. reports if available

- Arrangements for LFGs or equivalent

The following areas will need to be discussed, some of which will reinforce areas already covered by the ES but in the setting of the particular placement:
- Review the training placement elements of the generic educational work schedule or its equivalent
- Construct the personalized educational work schedule for the placement or its equivalent
- Construct the set of placement-level SMART objectives in the PDP
- Discuss the use of reflection and make an assessment of how the trainee uses reflection and dynamic PDPs
- Discuss procedural skill consolidation
- Discuss arrangements for LTFT training if appropriate
- Plan additional meetings including professional development meetings and the interaction with the placement CSs (depending on whether the ES or CS will be undertaking these)
- Arrangements for MSF
- Review the ARCP decision aid
- Pastoral support
- Arrangements for reporting of concerns
- Plan study leave

Professional Development Meetings

Trainers and trainees need to meet regularly across the training year. The GMC recommend an hour per week is made available for this activity. While it is not expected or possible for it to be an hour every week, the time not used for these meetings can be used to participate in LFG and ARCPs etc.

These meetings are important and should cover the following areas. This list is not exhaustive. Meet away from the clinical area regularly to:
- Discuss cases
- Provide feedback
- Monitor progress of learning objectives
- Discuss reflections
- Provide careers advice
- Monitor and update the trainee's PDP

- Record meeting key discussion points and outcomes using the Educational Meeting form on the ePortfolio
- Record progress against the CiPs by updating the comments in the CiP section of the portfolio (this will make writing the ESR at the end of the year much easier)
- Provide support around other issues that the trainee may be encountering

Transition arrangements for trainees already in programme

Any trainee within 12 months of their CCT date will remain on the previous curriculum. All other trainees including those in St6 who are less than full-time trainees or those in Out of Programme Experiences will transition to the 2021 curriculum.

Trainees who have come from alternative entry pathways

Training will need to be planned by the ES in consideration of previous experience and the route into St3. For example, trainees who have entered via a MRCPCH route may require additional support with adult neurology.

Annual Review of Competence Progression (ARCP)

Introduction

The ARCP is a procedure for assessing competence annually in all medical trainees across the UK. It is owned by the four Statutory Education Bodies (Health Education England, NHS Education for Scotland, Health Education and Improvement Wales and Northern Ireland Medical & Dental Training Agency) and governed by the regulations in the Gold Guide. The JRCPTB can therefore not alter the way in which an ARCP is run but can provide guidance for trainees and trainers in preparing for it and guide panel members on interpretation of both curricular requirements and the decision aid when determining ARCP outcomes. Although receiving a non-standard ARCP outcome (i.e. anything but an outcome 1 or 6) should not be seen as failure, we know that many trainees are anxious about such an outcome and everything possible should be done to ensure that no trainee inappropriately receives a non-standard outcome.

The ARCP gives the final summative judgement about whether the trainee can progress into the subsequent year of training (or successfully complete training if in the final year). The panel will review the ePortfolio (especially the ES report) in conjunction with the decision aid for the appropriate year. The panel must assure itself that the ES has made the appropriate entrustment decisions for each CiP and that they are evidence based and defensible. The panel must also review the record of trainee experience to ensure that each trainee has completed (or is on track to complete over ensuing years) the various learning experiences mandated in the curriculum.

Clinical Neurophysiology training and the ARCP

The change from the tick-box style competencies to the high-level Capabilities in Practice (CiPs) will have a major impact on how trainees are assessed and how they will progress through their ARCPs. It is vital we avoid an increase in trainees failing to achieve a standard ARCP outcome by helping trainees and trainers to prepare for the ARCPs and by stressing to

ARCP panels the basis of their assessment. ARCP panel members must ask the question: "Overall, on reviewing the ePortfolio, including the Educational Supervisor report, the Multiple Consultant Reports, the Multi-Source Feedback and (if necessary) other information such as workplace based assessments, reflection etc, is there evidence to suggest that this trainee is safe and capable of progressing to the next stage of training?"

Relationship with Educational Supervisor (ES)

It is vital that the trainee and the ES develop a close working relationship and meet up as soon as possible after the start of training. At that meeting, the ES should discuss how the various curriculum requirements will be met and how evidence will be recorded to ensure that it can be demonstrated that the Capabilities in Practice have been achieved at the appropriate level. This meeting should also result in the production of a Personal Development Plan (PDP) consisting of a number of SMART objectives that the trainee should seek to achieve during that training year. The trainee should meet up with their ES on a number of other occasions during the training year so that the ES can be reassured that appropriate evidence is being accumulated to facilitate production of a valid ES report towards the end of the year and guide the trainee as to further evidence that might be required.

Clinical supervisor (CS)

The trainee should have a Clinical Supervisor for each attachment and once again the trainee should meet up with the CS at the start of the attachment. Similar discussions should be held with the CS as have been held with the ES and once again, a PDP with SMART objectives should be constructed for each attachment. At the end of the attachment, the CS should be well placed to complete a Multiple Consultant Report (MCR). The CS should also document the progress that the trainee has made towards completing all the objectives of the PDP.

The trainee should provide a MCR from each designated CS as they are best placed to provide such a report but in addition should approach other consultants with whom they have had a significant clinical interaction and ask them also to provide a MCR. Throughout the attachment the trainee should be having SLEs completed by both consultants and more senior trainees. The number of SLEs demanded by the decision aid should be regarded as an absolute minimum and additional ones should be sought because

- Although they are formative, not summative assessments, they do provide additional evidence to show that a trainee is acquiring clinical (and generic) capabilities
- They may give the trainee the opportunity to have additional one to one clinical teaching from a senior colleague
- They allow the excuse for trainees to receive targeted and constructive feedback from a senior colleague.

Completing reports

When completing reports, all consultants should do more than just tick a box and make some generic comment such as "good trainee". It is important that they make meaningful comments about why they have assigned that particular level of performance/behaviour to that particular trainee. In doing this, the descriptors assigned to each CiP should be especially useful as an *aide-memoire*. They should specifically not be used as a tick list that requires a comment for each descriptor but should just allow the senior doctor completing the report to reflect on what comments would be helpful to the ES for completion of their report and to the ARCP panel in determining whether the trainee can progress to the next year of training. Constructive comments are also of course valued by the trainee. It is very helpful if the trainee can have constructive comments if they are progressing along the "normal" trajectory and especially if they are exceeding expectations either globally or in certain areas. If a trainee is performing below expectations then it is absolutely mandatory that meaningful, insightful and precise comments are provided.

ARCP preparation

As the ARCP approaches, it is essential that the trainee reviews their ePortfolio and ensures that all requisite information is available in a logical and accessible format. In particular they should ensure that:

- All appropriate certificates have been uploaded to the personal library and are clearly signposted
- An appropriate amount of reflection has been documented
- As a bare minimum (see comments above), the requisite number of SLEs (as demanded by the annual decision aid) has been completed and recorded in the ePortfolio
- MSF has been completed and the results released by the ES. It is critical that appropriate discussion/reflection has occurred and been recorded in response to the MSF
- MCR has been completed by each CS and additional ones have been completed by any supervisor with whom the trainee has had significant clinical/educational interaction
- The trainee has self-rated themselves for each CiP on the curriculum page
- The SMART objectives documented in their PDP have either been achieved fully and the evidence for that achievement has been clearly documented. If any objectives of the PDP have not been fully achieved, then the reasons for that have been clearly documented and evidenced.
- An appointment has been made with their ES to discuss the annual ES report that will inform the ARCP panel

The ES should review the portfolio to ensure that all the above requirements have been met and record a final rating for each CiP on the curriculum page. The ES should meet up with the trainee to discuss the ESR so that there are no surprises.

The ARCP

At the ARCP, the panel should review the ePortfolio and in particular it should focus on the ESR report but also review the MCRs, the MSF, the PDPs and reflection. It should also reassure itself that all the mandatory courses and exams have been attended/passed. If members of the panel have any concerns that the trainee under review is not eligible for a standard outcome (outcome 1 or outcome 6) then they should examine more detail in the ePortfolio and review more of the SLEs and other subsidiary information.

Clinical Neurophysiology ARCP Decision Aid 2021

This decision aid provides guidance on the requirement to be achieved for a satisfactory ARCP outcome at the end of each training year. This document is available on the JRCPTB website https://www.jrcptb.org.uk/training-certification/arcp-decision-aids

Evidence / requirement	Notes	Year 1 (ST3)	Year 2 (ST4)	Year 3 (ST5)	Year 4 (ST6)
Educational supervisor (ES) report	An indicative one per year to cover the training year since last ARCP (up to the date of the current ARCP)	Confirms meeting or exceeding expectations and no concerns	Confirms meeting or exceeding expectations and no concerns	Confirms meeting or exceeding expectations and no concerns	Confirms will meet all requirements needed to complete training
Generic capabilities in practice (CiPs)	Mapped to Generic Professional Capabilities (GPC) framework and assessed using global ratings. Trainees should record self-rating to facilitate discussion with ES. ES report will record rating for each generic CiP	ES to confirm trainee meets expectations for level of training	ES to confirm trainee meets expectations for level of training	ES to confirm trainee meets expectations for level of training	ES to confirm trainee meets expectations for level of training
Specialty capabilities in practice (CiPs)	See grid below of levels expected for each year of training. Trainees must complete self-rating to facilitate discussion with ES. ES	ES to confirm trainee is performing at or above the level expected for all CiPs	ES to confirm trainee is performing at or above the level expected for all CiPs	ES to confirm trainee is performing at or above the level expected for all CiPs	ES to confirm level 4 in all CiPs by end of training

Evidence / requirement	Notes	Year 1 (ST3)	Year 2 (ST4)	Year 3 (ST5)	Year 4 (ST6)
	report will confirm entrustment level for each CiP				
Multiple consultant report (MCR)	An indicative minimum number. Each MCR is completed by a consultant who has supervised the trainee's clinical work. The ES should not complete an MCR for their own trainee	2	2	2	2
Multi-source feedback (MSF)	An indicative minimum of 12 raters including 3 consultants and a mixture of other staff (medical and non-medical). MSF report must be released by the ES and feedback discussed with the trainee before the ARCP. If significant concerns are raised then arrangements should be made for a repeat MSF	1	1	1	1
Patient Survey	Minimum 20 responses	1		1	
Supervised Learning Events (SLEs):	An indicative minimum number to be carried out by consultants. Trainees are encouraged to undertake more and supervisors may require additional SLEs if	4 either mini-CEX or CBDs	2 either mini-CEX or CBDs	2 either mini-CEX or CBDs	2 either mini-CEX or CBDs

Evidence / requirement	Notes	Year 1 (ST3)	Year 2 (ST4)	Year 3 (ST5)	Year 4 (ST6)
Case-based discussion (CbD) and/or mini-clinical evaluation exercise (mini-CEX)	concerns are identified. SLEs should be undertaken throughout the training year by a range of assessors. Structured feedback should be given to aid the trainee's personal development and reflected on by the trainee.				
Directly Observed Procedural Skills (DOPS)	Indicative number of summative assessments of procedural competence	9	9	9	9
Appropriate Indicative numbers of procedures	This is at the discretion of the ARCP panel and should take into account stage of training and placements	As indicated in grid below	As indicated in grid below	As indicated in grid below	As indicated in grid below
Knowledge based Assessment			Completed	Completed	Completed
Basic Life Support (BLS)		Valid BLS	Valid BLS	Valid BLS	Valid BLS
Quality improvement (QI) project	Project to be assessed with quality improvement project tool (QIPAT)	1		1	

Evidence / requirement	Notes	Year 1 (ST3)	Year 2 (ST4)	Year 3 (ST5)	Year 4 (ST6)
Teaching observation			1		1

Practical procedural skills

Trainees must be able to outline the indications for the procedures listed in the table below and recognise the importance of valid consent, aseptic technique, safe use of analgesia and local anaesthesia, minimisation of patient discomfort, and requesting for help when appropriate. For all practical procedures the trainee must be able to appreciate and recognise complications and respond appropriately if they arise, including calling for help from colleagues in other specialties when necessary.

* Some trainees will undertake their neurology training as one block during ST3 and will not have performed any neurophysiology investigations.

Procedure	ST3	ST4	ST5	ST6	Indicative number performed by end of training
Record Adult EEG		Able to perform the procedure under direct supervision	Able to perform the procedure with limited supervision	Competent to perform the procedure unsupervised	10
Record Neonatal/ Paediatric EEG		Able to perform the procedure under direct supervision	Able to perform the procedure with limited supervision	Competent to perform the procedure unsupervised	10
Report Adult EEG		Able to perform the procedure under direct supervision	Able to perform the procedure with limited supervision	Competent to perform the procedure unsupervised	1000
Report Neonatal/ Paediatric EEG		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	1000

Procedure	ST3	ST4	ST5	ST6	Indicative number performed by end of training
NCS for common nerve entrapments		Able to perform the procedure under direct supervision	Able to perform the procedure with limited supervision	Competent to perform the procedure unsupervised	1000
NCS for less common nerve lesions		Able to perform the procedure under direct supervision	Able to perform the procedure with limited supervision	Competent to perform the procedure unsupervised	100
NCS for generalised neuropathy		Able to perform the procedure under direct supervision	Able to perform the procedure with limited supervision	Competent to perform the procedure unsupervised	100
EMG for neurogenic disorders		Able to perform the procedure under direct supervision	Able to perform the procedure with limited supervision	Competent to perform the procedure unsupervised	500
NCS and/or EMG in Paediatrics (5-16 years)		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	40
NCS and/or EMG is Paediatrics (<5 years)		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	10
EMG for probable myopathy		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	50
Repetitive nerve stimulation		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	30

Procedure	ST3	ST4	ST5	ST6	Indicative number performed by end of training
Record VEP		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	10
Interpret VEP		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	100
Record SSEP		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	10
Interpret SSEP		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	50
Surgical monitoring of spinal, cortical or cranial nerve function		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	20
Interpret ambulatory EEG, Surgical telemetry, diagnostic telemetry		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	100
Interpret polysomnography		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	30
Perform & interpret MUP and Turns/amp analysis		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	50

Procedure	ST3	ST4	ST5	ST6	Indicative number performed by end of training
Perform & interpret single fibre EMG (voluntary and/ or stimulated)		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	50
Interpret electroretinograms		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	100
Interpret ER audiograms/BSAEPs		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	50
Perform & interpret magnetic brain stimulation		Able to perform the procedure under direct supervision	Able to perform the procedure under direct supervision	Competent to perform the procedure unsupervised	50

When a trainee has been signed off as being able to perform a procedure independently they are not required to have any further assessment (DOPS) of that procedure unless they or their educational supervisor think that this is required (in line with standard professional conduct).

Levels to be achieved by the end of each training year and at critical progression points for specialty CiPs

Level descriptors
Level 1: Entrusted to observe only – no clinical care
Level 2: Entrusted to act with direct supervision
Level 3: Entrusted to act with indirect supervision
Level 4: Entrusted to act unsupervised
- Some training schemes use ST3 as a Neurology post and the trainees will not have exposure to the Neurophysiology components of the Curriculum

Specialty CiP	ST3	ST4	ST5	ST6	CRITICAL PROGRESSION POINT
Managing and delivering a basic adult and paediatric NCS / EMG service	2	3	3	4	
Managing and delivering a basic adult and paediatric Electroencephalography service	2	3	3	4	
Managing and delivering a basic adult and paediatric evoked potential service	2	3	3	4	
Managing and delivering an advanced adult and paediatric NCS / EMG service	2	2	2	4	
Managing and delivering an advanced adult and paediatric Electroencephalography service	2	2	2	4	
Managing and delivering an advanced adult and paediatric evoked potential service	2	2	2	4	

Training programme

The organisation and delivery of postgraduate training is the responsibility of the Health Education England (HEE), NHS Education for Scotland (NES), Health Education and Improvement Wales (HEIW) and the Northern Ireland Medical and Dental Training Agency (NIMDTA) – referred to from this point as 'deaneries'. A training programme director (TPD) will be responsible for coordinating the specialty training programme. In England, the local organisation and delivery of training is overseen by a school of medicine.

Progression through the programme will be determined by the Annual Review of Competency Progression (ARCP) process. The training requirements for each indicative year of training are summarised in the ARCP decision aid (available on the JRCPTB website).

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

The following provides a guide on how training programmes should be focussed in each training year in order for trainees to gain the experience and develop the capabilities to the level required.

Outpatients
Trainees should attend and be actively involved in regular peripheral neurophysiology clinics throughout the training programme. It is accepted that there may be some attachments (eg neurology) where the focus may be on other aspects of adult or paediatric neurology. Trainees are also encouraged to attend clinics in related specialities such as hand surgery and ophthalmology to complement their learning experience. It is expected that trainees will do clinics in all years of training. It will be up to TPDs and Educational Supervisors to construct imaginative and creative clinic programmes in order for the trainee to have a satisfactory educational experience. The number of patients that a trainee should see in each clinic is not defined, neither is the time that should be spent in clinic, but the trainee will need to have recorded

sufficient numbers and seen sufficient breadth of pathology to have completed the indicative numbers of their log book to the satisfaction of their ARCP panel. Clinic experience should be used as an opportunity to undertake supervised learning events and reflection.

Critical care experience
It is expected that trainees will be involved in the neurophysiological investigation of patients who are critically ill. Trainees should have significant experience of critical care, preferably in a level 3 intensive care unit (ICU) or in a level 2 high dependency unit (HDU). It is not expected that this be a formal placement, but multiple visits to critical care to perform neurophysiological investigation as required. The educational objectives of this are:
- To be able to work in the multi-disciplinary teams that run critical care units
- To develop enhanced procedural skills such as somatosensory evoked potentials and electromyography in an environment prone to electrical interference.
- To develop confidence in being involved with critical care units.

Inpatient experience
It is expected that trainees will be involved in the neurophysiological investigation of in-patients who need investigation on the ward or other settings. 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 of both the diagnostic process, as well as patient management. Patients seen should provide the basis for critical reading and reflection on clinical problems.

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 and active participation in discussions. Appropriate examples include, but are not limited to, neuromuscular pathology meetings, epilepsy surgery meetings, epilepsy or paediatric neurology meetings, retinopathy meetings and surgical planning meetings.

Operating theatre attendance
There are opportunities for trainees to be involved in intraoperative monitoring of neurological function during surgery and in mapping of epilepsy surgery. Trainees are encouraged to perform supervised activity to support the work of the surgeons.

Neurology placement

It is expected that those trainees who do not have a previous CCT in Neurology or Paediatric Neurology will spend an indicative 12 months in Neurology training. This can be in one or more blocks or spread throughout the 4 year training scheme, depending on local arrangements. Trainees may wish to be part of the Neurology on-call rota to gain experience and take part in ward rounds, but this is not mandatory. It will be up to TPDs and Educational Supervisors to construct imaginative and creative clinic attendances in order for the trainee to have a satisfactory educational experience. Particular emphasis should be placed on those adult and paediatric sub-specialties most relevant to neurophysiology such as epilepsy, neuromuscular disease, movement disorders, botulinum toxin clinics and neuro-ophthalmology clinics. Whilst it is reasonable for trainees to participate in stroke thrombolysis and headache clinics, it would be unacceptable for this to be the dominant neurology experience during training. Examples of suitable activity are:

- Ward rounds
- Ward Liaison
- ITU ward rounds
- Out-patient clinics
- Day Unit activity
- Multidisciplinary team meetings
- Clerking
- Acute neurology admissions
- Botulinum toxin clinics
- Neurology on-call

At the end of the neurology training it is expected that the following objectives are met.

Objectives	Clinical Neurophysiology CiP
Demonstrates competence in taking a neurology history and interpreting the findings	All
Demonstrates competence in performing a neurological examination and interpreting the findings	All
Demonstrates competence in managing a patient during a seizure or non-epileptic attack	Managing and delivering a basic adult and paediatric EEG service Managing and delivering an advanced adult and paediatric EEG service
Demonstrates competence in managing patients with acute and chronic neuromuscular disease	Managing and delivering a basic adult and paediatric EMG service Managing and delivering an advanced adult and paediatric EMG service
Demonstrates competence in recognising and interpreting seizure semiology	Managing and delivering a basic adult and paediatric EEG service Managing and delivering an advanced adult and paediatric EEG service
Demonstrates leadership and team skills with junior and multidisciplinary staff	All
Demonstrates time management skills	All
Demonstrates good communication skills	All
Demonstrates good practical skills such as botulinum toxin injection and lumbar puncture.	Managing and delivering an advanced adult and paediatric EMG service
Demonstrates a broad knowledge and understanding of the pathology, presentation, treatment and prognosis of neuromuscular diseases.	Managing and delivering a basic adult and paediatric EMG service Managing and delivering an advanced adult and paediatric EMG service

Objectives	Clinical Neurophysiology CiP
Demonstrates a broad knowledge and understanding of the pathology, presentation, treatment and prognosis of seizure disorders	Managing and delivering a basic adult and paediatric EEG service Managing and delivering an advanced adult and paediatric EEG service
Demonstrates a broad knowledge and understanding of the pathology, presentation, treatment and prognosis of neuroinflammatory disease.	Managing and delivering an advanced adult and paediatric evoked potential service

Training resources links

www.bscn.org.uk
[Clinical Neurophysiology 2021 Curriculum](#)
[Clinical Neurophysiology 2021 ARCP Decision Aid](#)
[JRCPTB Physician Trainer Resources](#)

Glossary of abbreviations

ACAT	Acute Care Assessment Tool
ALS	Advanced Life Support
ARCP	Annual Review of Competence Progression
AUT	Acute Unselected Take
CiP	Capabilities in Practice
CbD	Case-based Discussion
CCT	Certificate of Completion of Training
CS	Clinical Supervisor
CBME	Competency Based Medical Education
DME	Director of Medical Education
DOPS	Direct Observation of Procedural Skills
EPA	Entrustable Professional Activity
ES	Educational Supervisor
GPC	Generic Professional Capabilities
GMC	General Medical Council
HoS	Head of School
ICU	Intensive Care Unit
IMY1-3	Internal Medicine Year 1-3
JRCPTB	Joint Royal Colleges of Physicians Training Board
MDT	Multidisciplinary Team
MCR	Multiple Consultant Report
Mini CEX	Mini Clinical Evaluation Exercise
mHDU	Medical High Dependency Unit
MMC	Modernising Medical Careers
MSF	Multi-Source Feedback
NTN	National Training Number
PDP	Professional Development Plan

PS	Patient Survey
SLE	Supervised Learning Event
WPBA	Workplace Based Assessment

JRCPTB

Joint Royal Colleges of Physicians Training Board

ROYAL COLLEGE
of PHYSICIANS
of EDINBURGH

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PHYSICIANS AND
SURGEONS OF GLASGOW

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of Physicians