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| JOB IDENTIFICATION |
|  Job Title: Advanced Clinical Physiologist (Neurophysiology) Responsible to: Operational Lead PhysiologistsDepartment(s): Clinical Neurophysiology Service based at Royal Hospital for Children and Young People (RHCYP) & Department of Clinical Neurosciences (DCN), Edinburgh.Directorate: Department of Clinical NeurosciencesOperating Division: NHS Lothian-University Hospitals Job Descriptor: Sc013/L-LUHD-NEURO-ACPNo of Job Holders: Last Update: 11/08/2022 |
| 2. JOB PURPOSE |
| Plans, performs and reports on a range of highly specialised and complex Clinical Neurophysiological diagnostic investigations including intra-operative monitoring and epilepsy invasive monitoring in adults and paediatrics for patients of all ages from a wide variety of medical disorders including those, which may be neurological, orthopaedic and/or psychiatric in nature and provides an off-site portable service to any high dependency unit served by the regional service including intensive care, Special Care Baby Unit, Coronary Care and various theatre environments. |
| 1. **DIMENSIONS**
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| The workload is comprised of a variety of highly specialised investigations which can be different each day to enable optimisation of the service. Performs a variety of highly specialised Neurophysiological investigations e.g. intra-operative monitoring, epilepsy invasive monitoring, videotelemetry/ambulatory, electroencephalography (EEG), nerve conductions, evoked potentials adult and paediatric departments contributing to a service total of 10,000 patients per year.Staffing Responsibilities:Supervises and assesses practical training of Specialist Clinical Physiologists, Trainee Specialist Clinical Physiologists and Associate Clinical Physiologist.Participate in training and education of other staff groups e.g. nurses and HCS groups.Financial ResponsibilitiesPlaces orders for consumables and sources alternative quality products if required, authorised by the Service Manager or Operational Lead Physiologists.   |
| 4. Organisational Chart  |
|  Key Leadership  |
| **ROLE OF DEPARTMENT** |
| The department provides a comprehensive supra-regional Clinical Neurophysiology service primarily to the south-east of Scotland: * Edinburgh & Lothian
* Borders
* Forth Valley
* Dumfries and Galloway

Additional extra contractual referrals are also received from around the UK wide for National Services Division for Scottish Spinal Deformity and Scottish Paediatric Epilepsy Surgery. The service is responsible for provision of approximately 10,000 highly specialist clinical investigations per annum and has a current staff compliment of 16 Clinical Physiologists, 1 Associate Clinical Physiologist, 2 consultant Neurophysiologists. The team carry out a wide variety of investigations which include:* Electroencephalography- EEG
* Electromyography- EMG
* Nerve Conduction Studies- NCS
* Videotelemetry/ Ambulatory EEG recording/Home Videotelemery - Long Term Monitoring
* Pre Surgical Assessment of Epilepsy - Intracranial EEG recording.
* Intra Operative Monitoring - IOM
* Evoked Potentials – Visual, Auditory and Somato-sensory.

These specialised techniques lend support to the diagnosis, treatment and monitoring of patients with complex Neurological conditions. |

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| **6. KEY RESULT AREAS**1. To plan and perform complex intra-operative spinal monitoring and provide real-time reporting during spinal surgery cases directly to the surgeon which has a direct implication of surgical decision making in a time-pressured theatre environment.
2. Plan and perform complex specialised monitoring for epilepsy invasive cases, ensuring all specialised electrodes and equipment are available for the case and create specialised montages and protocols for conducting data collection for identifying area for resection.
3. Plan and perform electroencephalographic (EEG) investigations, including EEGs in intensive care and special care baby unit taking appropriate action(s) where necessary for out-patients and on the ward taking appropriate action(s) where required e.g. if a patient’s EEG supports the diagnosis of generalised epilepsy and is not on treatment or if the patient is in non-convulsive status epilepticus. This requires immediate EEG interpretation so that there is no delay in treatment.
4. Perform ambulatory/ Home video EEG telemetry recording, videotelemetry and SPECT videotelemetry alerting nurse to administer isotope at electrographic ictal onset, including mentoring of Physiologists training in long-term monitoring techniques, trouble shooting recorder faults, recognising artefacts, differentiating between valid and invalid data and review, clipping and editing data. Presenting findings at MDT meetings.
5. Perform Nerve Conduction Studies for Carpal Tunnel Syndrome and provide a Physiologist’s interpretation once reporting concordance audit is complete and provide a Consultant supported Physiologist led peripheral neuropathy clinic.
6. Performs all multi-modality evoked potentials employing current national standards e.g. visual evoked potentials, somato-sensory evoked potentials, brainstem auditory evoked potentials, P300 long latency evoked potentials and motor evoked potentials for clinical interpretation by the Consultant Neurophysiologist
7. Undertake assessments as Work Based Assessors with Trainees when required at relevant points during their 4-year BSc training or NSHCS training.
8. Responsible for managing day-to-day smooth running of out-patients clinics and in-patient workload with clinical supervision/mentorship and allocation of work for Specialist Clinical Physiologists.

 1. Participate in the teaching and training in Neurophysiology to a broad range of healthcare workers including medical, AHP, nursing, HCS, etc.
2. Perform audit of patient experience and propose improvements.
3. As required, triage and distribute workload factoring in available skill mix each day which may require to be altered several times depending on incoming urgent clinical referrals.
4. Participate in quality assurance, audit and /or research and development programmes.
5. Maintain and update accurate patient records on hospital systems
6. Participate in or conduct research and development programmes and audit for example in relation to specific clinical issues or service redesign/change.
7. Trouble shooting of equipment faults, liaising with third party equipment providers to correct faults as part of the agreed equipment service contracts.
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| **7a. EQUIPMENT AND MACHINERY** |
| XLTEK EEG recording equipmentSynergy Nerve Conduction recording equipmentSynergy Evoked Potential recording equipmentInomed Spinal Monitoring EquipmentXLTEK Ambulatory recording equipment XLTEK Home Videotelemetry equipmentXLTEK Video Telemetry recording equipmentMagstimCerebral Function Analyser Monitor |

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| 7b. SYSTEMS |
| TRAK-recording/maintenance of patient’s appointments.Patient Database systems connected to hospital servers.Collect monthly statistics Internet and Intranet  |
| 8. ASSIGNMENT AND REVIEW OF WORK |
| The post holder has significant discretion to work within a set of defined parameters to manage clinical workload and is guided by principles and Departmental protocols to provide a range of complex Neurophysiological investigations to a high level of competence.Clinical caseload will be generated by the specific service needs of each clinical area. Workload will be in the main, self-directed under the leadership of the Operational Lead Physiologist and relevant clinicians.The post holder will be responsible to Operational Lead Physiologists and Consultant Neurophysiologists who provide clinical guidance and professional management, work review and formal appraisal of performance.The post holder will delegate/allocate work to the team in the absence of more senior staff. |

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| **9. DECISIONS AND JUDGEMENTS** |
| Clinical decisions and judgement are required where the Advanced Clinical Physiologist must take complex data and differentiate and evaluate relevant physiological changes that will be provided to the surgeon and Consultant Neurologist on a real-time basis during intra-operative monitoring.Review of large amounts of data and using expertise, decision and judgement in editing the relevant sections for the Consultant Neurologist and Consultant surgeons to consider prior to epilepsy surgery. Triage referrals on a daily basis for TRAK appointed clinics prioritising on clinical urgency on occasions in consultation with requesting Medical staff, either on-site or using the emergency portable service.  |

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| 10. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB  |
| Reviewing large amounts of complex data, effectively communicating with a surgical team in a pressuredenvironment with information which is time critical.Ability to adapt to unpredictable urgent clinical demands and managing workload on a daily basis.Mentoring and training junior Clinical Physiologists while meeting clinical demand. |

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| **11. COMMUNICATIONS AND RELATIONSHIPS** |
| Advanced Clinical Physiologists require excellent communication with the patient, carer, relative and multidisciplinary teams including surgeons, anaesthetists, Neurologists, Psychologists, all grades of Clinical Physiologists, nurses and allied health professionals. Require to convey highly complex clinical and technical information on a frequent basis for example with surgeons and anaesthetists which is crucial for the clinical outcome of the patient when the spinal cord or neurological structures are being operated on and resected during intra-operative monitoring. Work collaboratively on a day-to-day basis with a multidisciplinary team and contribute to the smooth and efficient running of the service involving Physiologists and Consultant Neurophysiologists.Liaise with Consultant Neurologists and Consultant neurosurgeons in performing and discussing results each day of the epilepsy invasive monitoring.The post holder requires excellent interpersonal skills to communicate professionally with a wide range of people within and out-with the department. Communication is of core importance with all members of the intra-operative monitoring team. Frequent professional communication with patients, relatives and carers.Medical staff including Neurosurgical and Neurology – daily basis face-to-face discussion and by phone.Direct communication of interpreted complex real time data with the surgeon & anaesthetist and surgical staff in the theatre environment.Medical Physics Department-variable depending on equipment viability but usually weekly by phone and face-to-face.Nursing staff including charge nurse and Specialist Nurses-daily basis associated with arranging in-patient appointments and discussing if patient requires any specialist treatment support during their Neurophysiological investigation. Also frequent meeting with Liaises with Epilepsy Specialist Nurse with regards to patients attending for Video Telemetry. Learning Disabilities support Nurses-variable and dependant on demand liaising with nursing staff re appointment visits for patients with learning disabilities for patient escort and or familiarising visits prior to actual appointment.External contact out with the Trust, for example staff who belong to other Trusts /NHS organisations with whom we have Service Level Agreements:National professional bodies regarding registration.Specialist medical equipment manufacturer to trouble-shoot equipment errors. |
| **12. PHYSICAL, MENTAL, EMOTIONAL AND ENVIRONMENTAL DEMANDS OF THE JOB** |
| **Physical Skills & Effort:**Highly skilled placement of needle electrodes in the tongue, soft palate, around the eyes, mouth, arm and leg muscles and anal sphincter requiring highly developed physical skills of manual dexterity and demands excellent hand & eye co-ordination.Setting up cart-based specialised equipment in theatre, connecting up highly specialised multiple electrodes to correct head-boxes at the operating bed, accessing it under drapes where access can be restricted.Maintaining same position in theatre during prolonged periods of concentration interpreting real-time data.Skills to set up multiple electrodes to the patient’s head during EEG in intensive care where access is restricted due to ventilator, drips and monitors. Patient scalp access may be challenging due to bandaging requirements or intra-cranial bolt. Prolonged periods of bending, stretching and standing are required.Gaining co-operation of a patient for an extended period of time who may have learning disability, sensory loss impairment or young age in order to apply 23 electrodes to specific scalp areas to perform the EEG.Safe movement and handling techniques to move patients to and from test couches, with and without the mechanical aids, to safely use Neurophysiology recording equipment.Standard keyboard skills.**Mental Effort:**There is a frequent requirement for intense concentration during extensive periods of monitoring in theatre and can last for the majority of the shift.Prolonged concentration for extended patient tests and review of data (i.e. video telemetry). Daily concentration required for tests, calculations and reports. Supervision and teaching complex and highly specialist clinical skills as part of Clinical Physiologist training.Unpredictable workload and frequently changing plans in order to optimise meeting clinical demand.**Emotional Demands:**Frequent exposure to potentially highly distressing or highly emotional circumstances occurring most weeks as working in intensive care and high dependency units.The post holder will also have to deal with the concerns and anxieties distressed/anxious/worried patients/relatives. **Working Conditions:**Exposure to body fluid and bloods on a daily basis. |

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| 13. KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB |
| Educated to SCQF Level 11 e.g. Masters level in Spinal Intra-Operative Monitoring and Epilepsy Invasive Monitoring. RCCP/AHCS/HCPC registrationPost graduate knowledge and experience in epilepsy invasive monitoring, spinal and neuro- monitoring. Competence in specialist procedures acquired through prior training and accreditation via vocational degree, diploma and professional practical examinations for electroencephalography, nerve conduction studies, evoked potentials and videotelemetry in adults and paediatrics.Work Based Assessor training.Effective communications and IT skills. |

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| **14. JOB DESCRIPTION AGREEMENT** |
| A separate job description will need to be signed off by each jobholder to whom the job description applies.Job Holder’s Signature: Head of Department Signature: | Date:Date: |