

Acute and Chronic Neurosciences Care and Management
LEVEL 7, 30 CREDIT MASTERS MODULE
February 2021 COHORT

Learning Outcomes Overview

Teaching methods:	Seminars, lectures, workshops and self-directed learning
Assessment:	Written Case Study & Exam
Teaching Venue:	The Walton Centre NHS Trust, Education Centre, Liverpool L9 7LJ
	<p><i>Module Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ Enhance specialist knowledge and skills in the care and management of patients with neurologic / neurosurgical emergencies ❖ Critically analyse the physical and psychological impact of a neurosurgical / neurological condition on a patient ❖ Critically evaluate the effectiveness of interventions that are employed in the management of neuroscience patients using current evidence to support practice ❖ To critically appraise the role of the MDT in the care and management of a patient with a neurological , neurosurgical condition / illness

Session	Topic
<p>Session 1: Friday 19 Feb 2021 OSCE 1 09:00 - 12:00 Dr Rhys Davies/ Dr Dave Smith</p> <p>12:00 – 12:30 LUNCH</p>	<p>Introduction to Neurosciences</p> <p><i>Learning outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>Develop foundation knowledge to take forwards to all subsequent sessions</i> ❖ <i>Identify the range of clinical disciplines that have a conceptual basis in Neuroscience.</i> ❖ <i>Understand varied remits of the medical specialities and sub-specialities within Clinical Neuroscience – including Neurology, Neurosurgery and Psychiatry.</i> ❖ <i>Understand that the nervous system functions through communication between its elements, the neurons, defined by the Neuron Doctrine, involving electrical and chemical signals.</i> ❖ <i>Understand the origin of the membrane potential and describe how it is essential for electrical signal transduction within neurons.</i> ❖ <i>Describe chemical transmission between neurons, across the synapse, and describe the monosynaptic stretch reflex.</i> ❖ <i>Describe origin and the organizational principles of the nervous system, the neural tube, the neuron and the glial cell, the central nervous system (grey v. white matter, brain v. cord) and peripheral nervous system (sensory v motor, somatic v. visceral).</i> ❖ <i>Understand the debate in Neuroscience as regards localization of function v. ‘mass action’, and that localization is much more relevant to clinical practice.</i> ❖ <i>Understand, however, that consciousness may be considered as an emergent property of ‘mass action’ of the brain, its neurons and their connections.</i> ❖ <i>Identify examples of the four key methods of studying the nervous system: anatomy, recording, stimulation and lesions.</i>

Session	Topic
<p>12:30 – 13:30 Anitra Malin Chris Gillies/Rob Caley</p> <p>13:30 – 15:30 Sue Williams</p>	<p>LJMU Canvas and Library Services LJMU Assignment Writing and preparation LJMU enrolment</p> <p>Critical Care in Neurosciences <i>Learning outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>To gain a greater understanding of the pathophysiological processes involved with Traumatic Brain Injury (TBI).</i> ❖ <i>To gain a greater understanding of the medical and nursing management of patients with Traumatic Brain Injury.</i>
<p>Session 2: Friday 26 Feb 2021 OSCE 1 09:00 – 10:50 Karen Twist</p> <p>10:50 – 11:00 BREAK</p> <p>11:00 – 12:00 Gill Medley</p> <p>12:00 – 12:30 LUNCH</p> <p>12:30 – 13:30 Gill Medley</p> <p>13:30 – 14:20 Yvonne Copeland and Carolyn Cairns</p> <p>14:20 – 14:30 BREAK</p> <p>14:30 – 15:40 Yvonne Copeland and Carolyn Cairns</p>	<p>Neurological Conditions - MND <i>Learning Outcomes</i></p> <ul style="list-style-type: none"> ❖ <i>Recognise signs and symptoms of MND</i> ❖ <i>Discuss the disease trajectory of patients with MND and their care needs, with an emphasis on the diagnosis phase</i> ❖ <i>Gain an understanding of symptom management and recognise urgent/complex care needs</i> ❖ <i>Understand the importance of collaborative MDT working in MND</i> <p>Neurological Conditions - Movement disorders <i>Learning outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>Gain awareness of the range and complexity of movement disorders</i> ❖ <i>Understand signs and symptoms of Parkinson's disease, and be able to identify regions of the brain involved in movement and Parkinson's disease.</i> ❖ <i>Appreciate the impact of Parkinson's disease upon the patient and family at different phases of the condition.</i> ❖ <i>Recognise the importance MDT management in Parkinson's disease throughout the disease trajectory.</i> <p>Neurological Conditions - Movement disorders (continued)</p> <p>Neurological Conditions - MS <i>Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>Disease overview</i> <ul style="list-style-type: none"> ○ <i>To gain awareness of the pathophysiology, etiology epidemiology and classifications of MS including environmental and genetic factors</i> ❖ <i>Diagnosis and trajectory</i> <ul style="list-style-type: none"> ○ <i>To gain understanding of the diagnostic process, the many symptoms of MS the prognosis of the condition</i> ❖ <i>Treatment</i> <ul style="list-style-type: none"> ○ <i>To recognise the various ways in which MS is managed through disease modifying treatments, symptom management, and the management of relapses including the multi-disciplinary approach</i> <p>Neurological Conditions - MS (continued)</p>

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15:40 – 16:00 Rebecca Flesher/Natasha Hendry	Therapies and Neurological Conditions
Session 3: Friday 5 Mar 2021 OSCE 1 09:00 – 12:00 Dr Janine Winterbottom 12:00 – 12:30 LUNCH 12:30 – 15:30 Catherine Stoneley	Neurological Conditions - Epilepsy <i>Learning outcomes:</i> <ul style="list-style-type: none"> ❖ <i>Recognition of clinical features of first seizure recurring seizures with diagnosis epilepsy</i> ❖ <i>Understand the incidence and prevalence of seizures/epilepsy</i> ❖ <i>Treatment of epilepsy, antiepileptic drugs, surgery, alternative treatments, self-management</i> ❖ <i>An understanding of current controversies in the Epilepsies: Women (pregnancy & Valproate); LD increased incidence; elderly increased incidence and concomitant illness and medication; Sudden Unexpected Death in Epilepsy (SUDEP) and seizure related risks; repeat/frequent presentation in Emergency Department</i> Neurosurgical Conditions – Subarachnoid Haemorrhage <i>Physical, psychological and social effects of subarachnoid haemorrhage.</i> <i>Learning outcomes:</i> <ul style="list-style-type: none"> ❖ <i>To understand the anatomy of the vasculature of the brain in the context of subarachnoid haemorrhage</i> ❖ <i>Evidenced based guidelines for subarachnoid haemorrhage patients: be able to use that evidence/ knowledge to support both the physical, psychological and social effects.</i> ❖ <i>To gain an understanding of the physiological effects of subarachnoid haemorrhage that impact on management. This should serve as a basis for ongoing learning into care of the neuro-vascular patient</i> ❖ <i>To understand treatment and be able to reason, treatment options and patient management</i> ❖ <i>Gain an understanding of the impact of psychological and social effects subarachnoid haemorrhage and use that knowledge to evaluate how nursing intervention can improve outcomes</i>
Session 4: Friday 12 Mar 2021 OSCE 1 09:00 – 12:00 Sara Kewin	Neurosurgical Conditions – Hydrocephalus and CSF <i>Learning Outcomes:</i> <ul style="list-style-type: none"> ❖ <i>To review the underlying pathophysiology of this group of conditions.</i> ❖ <i>To identify treatments available.</i> ❖ <i>To review external CSF drainage and its clinical uses</i> ❖ <i>Demonstrate the application of current evidence into clinical practice</i> ❖ <i>Discuss the transition of patients with CSF disorders from paediatric services to adult service</i>
Session 5: Friday 19 Mar 2021 OSCE 1 09:00 – 12:00 Keren Smallwood	Neurosurgical Conditions - Spinal Conditions/Spinal Cord Injury <i>Learning Outcomes:</i> <ul style="list-style-type: none"> ❖ <i>Have an overview of the anatomy and physiology of spinal conditions and spinal cord injury</i> ❖ <i>Have an overview of the different spinal conditions and the rationale for spinal surgery</i>

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	<ul style="list-style-type: none"> ❖ <i>Understand the different surgical procedures</i> ❖ <i>Have a basic awareness of the presentation of post-operative complications following spinal surgery and how to manage these.</i> ❖ <i>Gain a basic understanding of Spinal Cord Injury</i> ❖ <i>Have an overview of the effects of spinal cord injury and how to care for a patient</i> ❖ <i>Have a basic understanding of the complications associated with Spinal cord Injury and how to manage these.</i>
<p>Session 6: Friday 26 Mar 2021 OSCE 1 09:00 – 13:00 SMART Team</p>	<p>Acute Neurology and Neurosurgical Emergencies <i>To gain an understanding of what comprises a Neurological/Neurosurgical emergency.</i> <i>Learning outcomes</i></p> <ul style="list-style-type: none"> ❖ <i>Conduct a relevant history taking and physical examination of a neuroscience patient in an emergency situation whose condition has deteriorated utilising a standardised ABCDE approach.</i> ❖ <i>Become proficient in responding to neurosurgical or neurological emergencies through the use of the Simulator suite, whilst gaining experience working within a team to appropriately manage these situations.</i> ❖ <i>Demonstrate an ability to communicate and consult effectively with the multidisciplinary team, understanding the relevant diagnostic tests and interventions.</i> ❖ <i>Demonstrate an understanding of the importance of record keeping, reporting of near misses and a brief overview of Human factors in the emergency situation.</i> ❖ <i>Critically reflect on simulation experience for CPD, by gaining feedback through the debrief process to produce portfolio evidence for revalidation.</i>
2 April 2021	Personal Study Week
<p>Session 7: Friday 9 Apr 2021 OSCE 1 09:00 – 12:00 Gary Walsh, Amy Carter, Mel Taylor</p> <p>12:00 – 13:00 Anitra Malin</p>	<p>An Introduction to Therapies in Neuroscience <i>Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>To gain an understanding of relevant factors in referral requirements and what information they need to collect in order to prioritize level of need.</i> ❖ <i>To recognise how to prepare a patient pre-therapy and ongoing management identifying their current needs.</i> ❖ <i>To appreciate the importance of optimizing a patient in their care by following recommendations from the MDT and through effective use of their own level of skill.</i> ❖ <i>To understand the support needs of the patient working towards therapeutic goals.</i> ❖ <i>To recognise change in a patient and respond appropriately to this both in their own interim actions and communication with the wider MDT.</i> <p>LJMU Assignment Writing and Preparation</p>

Session	Topic
<p>Session 8: Friday 16 Apr 2021 OSCE 1 09:00 – 10:40 Dr Benedict Michael/ Dr Christine Burness</p> <p>10:40 – 10:50 BREAK</p> <p>10:50 – 12:30 Alison Cox</p>	<p>Acute Infections of the Nervous System <i>Learning Outcomes: TBD</i></p> <p>Neurosurgical Conditions - Neuromodulation and Neuropathic pain <i>Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>Develop an understanding of the pathophysiology of neuropathic pain.</i> ❖ <i>Gain an understanding of the assessment and evidence based treatments in the management of neuropathic pain</i> ❖ <i>Gain and awareness of the biopsychosocial factors that affect a patient with neuropathic pain</i> ❖ <i>Develop an understanding of neuromodulation techniques used to treat chronic pain</i> ❖ <i>Gain an awareness of the patient pathway, for patients being considered for intrathecal therapy or spinal cord stimulation and the application of these.</i> ❖ <i>Awareness of the ongoing management of patients with implantable devices.</i>
<p>Session 9: Friday 23 Apr 2021 OSCE 1 09:00 – 11:00 Anna Crofton</p> <p>11:00 – 11:10 BREAK</p> <p>11:10 – 13:10 Emma Wilby</p> <p>13:10 – 14:00 LJMU</p>	<p>Brain & CNS Tumours</p> <ul style="list-style-type: none"> ❖ <i>To develop an understanding of the brain and CNS tumour pathways</i> ❖ <i>To describe the common symptoms associated with brain and CNS tumours and management of these</i> ❖ <i>To describe the neurosurgical procedures, post-operative management and potential post-operative complications</i> ❖ <i>To develop an understanding of adjuvant treatment, potential side effects and complications and impact on patient and family</i> ❖ <i>To develop an understanding of the impact of living with a brain or CNS tumour and the interventions available to support patients and family</i> <p>Skull Base Teaching <i>Learning Outcomes: TBD</i></p> <p>Ethical Principles</p>
<p>Session 10: Friday 30 Apr 2021 OSCE 1 09:00 – 12:00 Jon Smith</p>	<p>Mental Health and Neuroscience Conditions <i>Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>Understanding of the common incidence of neuropsychiatric problems (depression, anxiety etc.) after brain injury</i> ❖ <i>Appreciation of the factors involved in the development of mental health issues after ABI</i> ❖ <i>Recognition of the clinical features of mental health problems (depression, anxiety, psychosis etc.) & how they may present differently in ABI</i> ❖ <i>Treatment of neuropsychiatric disorders after brain injury</i>

Session	Topic
	<ul style="list-style-type: none"> ❖ <i>Understanding of the types of personality change after ABI- with particular consideration of organic personality disorder</i> ❖ <i>An understanding of current controversies in ABI: Dementia risk after ABI and post-concussion syndrome; risk assessment with regards suicide</i>
<p>Session 11: Friday 7 May 2021 OSCE 1 09:00 – 12:00 Dr Peter Kinsella</p>	<p>Neuropsychology and Cognition <i>Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>To be able to describe the key areas of the brain and explain how each supports different aspects of cognition</i> ❖ <i>To develop an understanding of cognitive domains and the cognitive skills hierarchy</i> ❖ <i>To develop an understanding of cognitive deficits, the impact on function and quality of life</i> ❖ <i>To appreciate the role of key health professionals in the assessment and treatment of patients with cognitive deficits</i>
<p>Session 12: Friday 14 May 2021 OSCE 1 09:00 – 12:00 Eleri Phillips and Mark Peasley</p> <p>12:00 – 12:30 LUNCH</p> <p>12:30 – 14:30 Dr Julie Raj</p> <p>14:30 – 14:40 BREAK</p> <p>14:40 – 16:30 Sarah-Jane Hewitt</p>	<p>Pharmacology <i>Learning outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>Have an overview of the key principles of pharmacodynamics and pharmacokinetics and relate this to examples within neurosciences.</i> ❖ <i>Increase awareness of considerations involved with selection of specific medicines for individual patients, such as interactions, licensing, cautions and contra-indications.</i> ❖ <i>Gain a greater appreciation of wider practical issues relating to medicines that arise in specific patient groups or situations, such as patients with swallowing difficulties.</i> ❖ <i>Develop an understanding of issues faced by specialist centres in managing medicines for patients across the primary/secondary/tertiary care interface.</i> <p>Palliative Care and Acute Oncology <i>Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>To be able to describe the management of the neuroscience patient in the last days of life – understanding specialist palliative care</i> ❖ <i>To understand the importance of advanced care planning for patients with life limiting neurological diagnosis</i> ❖ <i>To appreciate neurological disease trajectory and the importance of early intervention from palliative care</i> ❖ <i>To have an overview of the symptom management of the patient with deteriorating neurology</i> <p>Head Injury & Trauma <i>Learning Outcomes:</i></p> <ul style="list-style-type: none"> ❖ <i>Brief overview of types of traumatic brain injuries, including neurosurgical interventions.</i> ❖ <i>Brief overview of concussion syndrome-signs and symptoms.</i> ❖ <i>Post traumatic amnesia management.</i> ❖ <i>Gain an understanding of the trauma pathway/network.</i> ❖ <i>Brief overview of safeguarding and DOLs/management of aggressive patient.</i>

Session	Topic
Session 13: Friday 21 May 2021 OSCE 1 09:00 – 10:20	Written Anatomy & Physiology Examination
10:20 – 10:45 BREAK	
10:45 – 11:30 Jayne Burton	Patient / Family Story
11:30 – 12:00 Anitra Malin	LJMU Assignment Writing