**Neurocritical Care Program – Program Mapping**

**Audience/Learner Groups**

Primary Learners

* From Core Trainees Anaesthesia to Advanced ICM Trainees (senior registrar on-call)
* Induction modules for Trust grade doctors not included here (separate modules for this)

Secondary learners

* Final FRCA Trainees (anaesthesia)
* FFICM exam (ICM Trainees)

**Needs assessment outcome**

* No online resource that clearly collates all relevant Neurocritical Care evidence.
* BJA Education articles are pre-2000 with regards to many Neurocritical care conditions
* No eLearning modules on any free eLearning repostiroy (e-LFH) pitched at Core/Specialist registrar level to learn about the pathologies seen in NCCU. These cohorts of trainees are the most likely to be on call as the senior registrar on the unit so need detailed levels of understanding of how to manage the below pathology.
* Content needs to be delivered in a concise and accurate way that can be easily updated but also has clinical subject matter expert input through webinars (Blended).

**Overall Learning Outcomes of the Program**

Overall learning outcomes are to be able to understand in detail all the pathologies that are encountered on NCCU, including understanding the seminal and recent relevant medical evidence that informs care on the Neurocritical Care unit. Some discussion should be given to questions that the evidence fails to answer fully to allow discussions around how to deal with these uncertain situations.

**Build Software and Hosting Platform**

* Articulate Rise 360 (build software) – to upload to Bridge (hosting platform) in the first instance for EOE trainees. Scope to upload to eLFH for national coverage.

**Module Breakdown – each module to cover the following extensively and comprehensively:**

* Traumatic Brain Injury
* Cerebral Protection & Monitoring
* Spinal Cord Injury: 4 Online Courses with 1 Case Based discussions via Teams/Zoom and 1 Webinar by Rehab Nurses
* Acute Cerebrovascular Complications
* Neuromuscular Disorders
* Meningitis and encephalomyelitis
* Brain Death
* Status Epilepticus
* Polytrauma
* Radiological interpretation on NCCU

**Authorship**

Overall Project Lead: Anne Booth/Aofie Quinn

eLearning Module Design: Chris Christou

Subject Matter Expert Panel: Professor Menon, Ronan O’Leary, Virginia Newcombe, Vikram

Course Intellectual Property: Cambridge Critical Care Network (NCCU Property)

**Preliminary Course Launch:**

September 2022

**Module Table - Breakdown**

In the below table, consideration should be given to the best ways of delivering learning objectives for each module. As a guide:

* **eLearning modules** are factually driven and should be thought of as the foundational knowledge base. These modules should contain the level of detail relative to the learners its being delivered to.
* **Training events/Webinars** can be interwoven with eLearning Modules. These live trainings give learners a chance to speak to a subject matter expert to help consolidate or clarify learning objectives but also discuss difficult cases in clinical areas where medical evidence does not give clear guidance.

Curriculum matching is vital but is the minimum amount of knowledge required to deem a trainee as competent. Thought should be given to providing higher levels of detail to encourage the highest quality educational content within the program.

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| --- | --- | --- | --- | --- |
| **Module** | **Course** | **Webinar/Lesson** | **Learning Objectives/Curriculum Code** | **Assets**  |
| **Spinal Cord Injury** | OverviewSeat time: (30 minutes)* Introduction
* Epidemiology – keep stats relevant to UK
* Pathogenesis including Applied Anatomy and Physiology
* Overview of Complete vs incomplete spinal cord injury
 |  | * Understand why SCI is important.
* In what population
* **Understand the anatomy of the spinal cord and how it relates to presentation**
 | Illustration of Spinal CordAnimation of Descending and ascending tracts (GIF)Carousel of the Incomplete Syndromes |
| Initial Assessment and ManagementSeat Team: (40 minutes)* ABCD Approach
* Immediate acute complications
* Systems approach to complications
* Neurological Assessment – ASIA scale focus
* How to immobilise properly
 |  | * Understand the immediate complications of spinal cord injury
* Specific management of complications
* Focus on Spinal shock
* Effective spinal cord immobilsation
* Understand this spinal shock is associated with injuries of polytrauma
 | Clickable Interactive Diagram of a Human systems with pop out complicationsInteractive ASIA PDFCases with ASIA ScoreNeurosurgeon Videos or ATLS video |
|  | Webinar of Cases – focus on immediate management and how to fill out ASIA chart | * Understand the difference between incomplete and complete injury, different ASIA Scores, Frequency of testing
 |  |
|  | ICU management of SCI: (45 minutes)* Prevention of secondary spinal cord injury
* Respiratory dysfunction and ventilatory strategies for high spinal cord injury
* Cardiomyopathies
* GI complications
* Urinary Tract complications
* Skin care
* When is the neck secure
 |  | * Understand how to prevent Secondary SCI and MAP augmentation
* Associated Subactue issues found in ICU as a result of immobility, muscular dysfunction
 | Animation of MAP augmentation and vasopressor support increasing spinal cord perfusionVentilation animation for lesions affecting diaphragm dysfunctionDysautonomia Infographic or diagramNeurosurgeon explainer about stable vs unstable fractures and when to fixate? |
|  | Post ICU care* Chronic Pain
* Psychosocial support
* Endpoints and Outcomes
 | Webinar with Rehab nurses | * Pain strategies for SCI patients
* What ongoing care happens outside of ICU
* Where should Patients be discharged too
* Long term weaning strategies, what can ICU staff do to help from the beginning.
 | Patient Testimonials?Rehab unit tour?  |