The Faculty of
Intensive Care Medicine

ICM Unit Brief

Part 1 Hospital Details

1.1 Hospital name

Addenbrooke's Hospital

1.2 Full address (you **must** include postcode)

Neurosciences and Trauma Critical Care Unit
Addenbrooke's Hospital
Hills Road
Cambridge
CB2 0QQ

1.3 Hospital Telephone number

01223 245151

Part 2 ICU Department contact details

2.1 Direct telephone number to Department

01223 216292

2.2 Faculty Tutor name

Dr Vikram Malhotra

2.3 Faculty Tutor Email address

vikram.malhotra@nhs.net

Part 3 Unit Structure

3.1 Number of Beds

27

3.2 Number of admissions

1200 p.a.

3.3 Percentage of elective vs emergency admissions

97.5 % emergency

3.4 Overview of case mix within the unit

NCCU is a large, adult critical service within a major academic health sciences centre with well established, highly successful academic and research activity. The admission profile is dominated by the co-located East of England Major Trauma Centre and the case mix is overwhelmingly emergency. Clinical activity comprises traumatic brain injury, severe extra-cranial and spinal trauma, neurovascular disease, acquired disorders of weakness, autoimmune encephalitis, seizure disorders, and neurosepsis.

3.5 Names of Consultants, roles and areas of interest

Name	Role (eg clinical lead, consultant)	Areas of interest
Dr Ronan O'Leary	Specialty Lead NHS England National Clinical Reference Group Director, Healthcare Data Programme, University of Cambridge	
Dr Rowan Burnstein	Deputy Postgraduate Medical Dean, HEE EoE Regional lead for less-than-full-time training	Global health TEL in medical education Undergraduate medicine
Prof Jonathan Coles	Deputy FICM Tutor Neuroanaesthesia and Neurocritical Care Society (NACCS), UK Council FFICM Examiner (Lead for MCQ) NCCU follow-up clinic	Research and training
Dr Adriana Cordier		Pre-hospital emergency medicine
Dr Ari Ercole	Deputy Chief Information Officer ESICM Data Science Section Chair Equipment lead	Research Health informatics
Dr Arun Gupta	Director of the Digital Health and Surgical Training Centre	Medical education and workforce Multimodality monitoring Research – PI for PANGEA trial
Dr Alasdair Jubb	Trauma lead Consultant rota manager NCCU follow-up clinic Associate PI, Division of Anaesthesia, University of Cambridge Visiting Scientist, CRUK-Cambridge Institute	Research – The causes and mechanisms of the long term effects of a critical illness Molecular diagnostics
Dr Andrea Lavinio	Clinical Lead for Organ Donation Medical Examiner	Research Biotechnology
Dr Vikram Malhotra	FICM Faculty Tutor Infection control	Education and training FUSIC Mentoring Research (molecular diagnostics) National ICM recruitment
Dr Basil Matta		Data integration research (multimodality, non-invasive and remote monitoring, brain function monitoring) Patient safety systems Business venture development Teaching (national and international) Expert medico-legal practice
Prof David Menon	Professor and Head – Division of Anaesthesia, University of Cambridge NCCU follow-up clinic	Research
Dr Virginia Newcombe	NIHR Advanced Fellow Cambridge University lead for academic emergency medicine NCCU follow-up clinic	Research (traumatic brain injury prognosis and neuroimaging) Undergraduate medical education

	Junior doctors' education lead	
Dr Aoife Quinn	WICM Committee WICM Emerging Leaders programme Learning from deaths lead Junior doctor recruitment	Training FICM Thrive mentoring programme National ICM recruitment

3.6 Details of research projects being undertaken within the unit

The Cambridge Neurosciences and Trauma Critical Care Unit (NCCU) provides the focus for the multidisciplinary Cambridge Acute Brain Injury (ABI) Group, which involves a close collaboration between intensivists, neurosurgeons, neurologists, rehabilitation physicians, emergency physicians, radiologists, data scientists, and imaging scientists.

Key research resources include multimodality monitoring (including ICM+; https://icmplus.neurosurg.cam.ac.uk/), advanced neuroimaging at the Wolfson Brain Imaging Centre (WBIC; https://www.wbic.cam.ac.uk/) providing access to positron emission tomography, magnetic resonance imaging/spectroscopy (3 Tesla and 7 Tesla) and hyperpolarized magnetic resonance spectroscopy, and advanced laboratory facilities (including expertise and equipment in for neuroimmunology and a Quanterix HDX platform for biomarker research).

The ABI group has published over 600 peer reviewed papers in the last two decades, and provided the base for peer-reviewed grants totalling over £50 million. Our research covers the entire narrative of disease in neurocritical care – from prehospital medicine to outcome up to 10 years post-ictus; and covering outcomes that range from full recovery to disorders of consciousness. We also span a wide variety of research approaches including experimental medicine, observational studies¸ clinical trials, and technique development. We drive research locally (in studies that use advanced techniques) and lead national and international collaborations such as the CENTER-TBI study (https://www.center-tbi.eu/). NCCU consultants and other colleagues in the ABI Group led and contributed to the Lancet Neurology Commissions on Traumatic Brain Injury in 2017 (https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(17)30371-X/fulltext) and 2022 (https://www.thelancet.com/journals/laneur/article/PIIS1474-4422(22)00309-X/fulltext); and to the Report of the All Party Parliamentary Group on Acquired Brain Injury (https://ukabif.org.uk/resource/resmgr/campaigns/appg-abi_report_time-for-cha.pdf).

The unit is also closely involved in global health projects running across the Cambridge biomedical campus, including the HEE-funded SCALE Critical Care initiative and the NIHR Global Health Research Group on Acquired Brain and Spine Injury. These projects have both educational and research dimensions. Research spans epidemiological studies of TBI through to understanding facility-level care pathways.

Research is driven by the whole consultant group, many of whom are grant holding principal investigators , and several have university appointments. As a unit, we have strong track record of nurturing clinical academics at all stages of training – starting with Academic Foundation trainees (with three posts rotating through the NCCU each year), through Academic Clinical Fellows, PhD studentships, Clinical Lectureships, Clinician Scientist Awards, and Principal Investigator appointments at consultant level (both in the UK and abroad).

Part 4 Training

4.1 Details of training opportunities on the unit

We provide training to HEE trainees (including ICM, FY2, medicine, emergency medicine, neurosurgery, and anaesthesia) and clinical fellows recruited from a diverse range of specialities across the globe. Junior doctors will have a unique exposure to our large patient cohort, and work closely within a well-supported multi-disciplinary team. Specific training opportunities include:

Managing a diverse cohort of complex sub-specialty critically ill patients.
Development of core non-clinical skills: compassionate family discussions, clinical leadership, interprofessional relationships and teamwork.
Critical care procedural skills: invasive lines, airway management including percutaneous, tracheostomies, bronchoscopies, and FUSIC ultrasound.
Senior-SpR role: specific non-clinical skill development, primarily in clinical leadership.
Critical care transfers.
Participation in the initial stabilisation and management of major trauma patients in the Emergency Department.
Weekly MDT focused on rehabilitation.
NCCU follow-up clinic.
Mentoring programme to aid personal and professional development.
Allied specialty clinics such as rehabilitation, neurology, and neurosurgery.
Sessions in operating theatres, neurophysiology, and neuroradiology.
Develop teaching and critical appraisal skills.
Quality improvement projects (local, regional, national and international, for example The SCALE global health project)
We can also offer clinical observerships for short periods.

4.2 Details of departmental teaching days

Tuesday (trainee led) afternoons
Thursday (consultant led) afternoons
Annual study day – open nationally

4.3 Details of clinical governance meetings and / or M & M

Fortnightly NCCU admin meeting
Quarterly clinical governance meeting
Quarterly learning from deaths meeting

4.4 Number of trainees on each tier of the rota

Three tiers, 8 junior doctors on each tier. We are supportive of less-than-full-time training.
Two Advanced Critical Care Practitioners