R Adams Cowley
Shock Trauma Center
University of Maryland

CRITICAL CARE RESUSCITATION UNIT (CCRU)

The Critical Care Resuscitation Unit (CCRU) is a novel unit at the R Adams Cowley Shock Trauma Center which specializes in the resuscitation of adult patients with time-sensitive critical illness in need of transfer for specialty care. The CCRU is modeled after the Trauma Resuscitation Unit (TRU) located within the Shock Trauma Center. The CCRU utilizes a multi-disciplinary team approach while providing rapid evaluation, aggressive resuscitation, and early initiation of life-saving therapies.

TRANSFER TO THE CRITICAL CARE RESUSCITATION UNIT

When a patient requires transfer to the CCRU, the first contact is through Maryland ExpressCare at the University of Maryland Medical Center. Phone consultation with the appropriate admitting specialty service attending physician, the CCRU attending physician, and the sending hospital provider is then coordinated by Maryland ExpressCare.

If the patient is being transported by Maryland ExpressCare, the critical care nurse communicates with the CCRU physician upon arrival to the sending hospital, and advanced care is provided at the point of contact. While en route, a multi-disciplinary plan of care is developed so that expedited care can be delivered upon arrival.

CRITICAL CARE RESUSCITATION UNIT FACULTY

CCRU faculty is a diverse group of physicians with fellowship training in critical care subspecialties including critical care medicine, surgical critical care, anesthesia critical care and neurocritical care.

Daniel Haase, MD, RDCS
Medical Director, CCRU
Assistant Professor of Emergency Medicine

Kimberly Boswell, MD
Assistant Professor of Emergency Medicine

Kevin Jones, MD, MPH
Assistant Professor of Emergency Medicine

Jay Menaker, MD
Professor of Surgery and Emergency Medicine

Ashley Menne, MD
Assistant Professor of Emergency Medicine

Jeffrey Rea, MD
Assistant Professor of Emergency Medicine

Quincy Khoi Tran, MD, PhD
Assistant Professor of Emergency Medicine

Theresa DiNardo, MSN, RN, CCRN
Nurse Manager, CCRU

All patient referrals should go through Maryland ExpressCare at **410-328-1234** or visit **umm.edu/referral** for more information

The CCRU admits adult patients with a wide range of non-traumatic, time-sensitive critical illnesses, including, but not limited to:

CARDIAC EMERGENCIES
- Cardiogenic Shock and Evaluation for VA ECMO
- Massive Pulmonary Embolism
- Acute Valvular Insufficiency
- Acute Viral Cardiomyopathy

VASCULAR EMERGENCIES
- Acute Aortic Dissection
- Ruptured Aortic Aneurysm
- Acute Mesenteric Ischemia
- Acute Limb Ischemia

EMERGENCY GENERAL SURGERY
- Necrotizing Fasciitis and Fournier's Gangrene
- Hemorrhagic and Necrotizing Pancreatitis
- Intra-abdominal and Retroperitoneal Hemorrhage
- Abdominal Compartment Syndrome
- Esophageal Perforation

NEUROLOGIC EMERGENCIES
- Aneurysmal Subarachnoid Hemorrhage
- Ischemic Stroke requiring Mechanical Thrombectomy
- Intracerebral Hemorrhage
- Status Epilepticus

MEDICAL EMERGENCIES
- Acute Respiratory Distress Syndrome and Evaluation for VV ECMO
- Massive Gastrointestinal Bleeding
- Fulminant Hepatic Failure and Evaluation for MARS®
- Post-cardiac Arrest Care and Targeted Temperature Management
- Severe Sepsis

OTHER EMERGENCIES
- Toxicologic Emergencies such as Beta-Blocker or Calcium Channel Blocker Overdose
- Obstetric and Post-Partum Emergencies
- Severe heat stroke or hypothermia
- Arterial gas embolism or other hyperbaric emergencies

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CRITICAL CARE RESUSCITATION UNIT NURSING

The Critical Care Resuscitation Unit is comprised of highly specialized nurses with diverse backgrounds that enable them to provide timely, experienced, and collaborative care to a broad population of critically ill patients. All of our nurses have previous experience in other intensive care units, including MultiTrauma and NeuroTrauma Critical Care, Cardiac Surgery Intensive Care, Neuro-Intensive Care, Cardiac Intensive Care, and Trauma Resuscitation Units.

The Critical Care Resuscitation Unit upholds the highest standards and expectations while caring for such a diverse and critically ill patient population. The CCRU staff undergoes rigorous training and education to maintain their level of expertise and ensure forward growth through quarterly CCRU education days, STC marathon training, and annual hospital training. The CCRU nurses also participate annual emergency preparedness and disaster response training to ensure the staff remains in a state of emergency readiness. The staff complete annual decontamination training, mass casualty training, active shooter response training, annual fire evacuation training via the MedSled®, and respond to quarterly emergency call down drills.

The CCRU is staffed with an advanced practice provider (APP) 24/7. The APPs are carefully selected based on extensive experience in an array of critical care settings or after formal fellowship training. They complete a comprehensive orientation, including procedural simulation and skills labs. All CCRU APPs are credentialed to perform and considered expert at advanced bedside procedures as well as the management of critically ill patients. The APPs collaborate with the intensivists, nurses, and multidisciplinary team to admit patients, manage resuscitations, treat critical illness, and coordinate ongoing care.

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The CCRU commonly performs or manages the following procedures and devices including, but not limited to::

- Veno-Arterial ECMO Cannulation for cardiogenic shock
- Veno-Venous ECMO Cannulation for hypoxic respiratory failure
- Continuous Renal Replacement Therapy (CRRT) initiation for renal failure
- Intra-Arterial Balloon Pump placement for cardiogenic shock
- Pulmonary artery catheter (Swan-Ganz) for cardiogenic shock
- Transvenous pacing for refractory arrhythmias
- REBOA placement for massive hemorrhage
- Esophageal Balloon Tamponade insertion and management for bleeding esophageal varicies
- Massive Transfusion Events
- Extra Ventricular Drain placement for elevated intracranial pressure (ICP)
- Continuous EEG monitoring for status epilepticus
- Intravascular cooling/ warming catheters
- Advanced hemodynamic monitoring with bedside echocardiography