

# **Certified Neurovascular Clinician (CNIC) Review Course Outline**

## **Introduction to the Neuro-Interventional Clinician Role**

- Neurointerventional roles and responsibilities
- Practice standards for interventional labs

## **Radiation Safety**

- Radiation sources
- Principles of radiation protection
- Leveraging technology in the interventional suite

## **Clinical Localization**

- Cerebral anatomy and vascular territories
- Cytoarchitecture and localization
- Anterior, posterior, cerebellar, and brainstem localization
- Lacunar syndromes

## **Standardized Stroke Scales**

- NIHSS, Modified Rankin Scale

## **Neuroimaging for stroke**

- Neuroimaging basics (CT, CTA, MRI, CTP, angiography)
- Ultrasound imaging in acute stroke

## **Ischemic Stroke and Transient Ischemic Attack**

- Pathophysiology of Ischemic Stroke and TIA
- Acute reperfusion therapies
- Post-reperfusion management and complications
- Stroke Etiology and Pathogenic Mechanism
- Secondary Prevention

## **Hemorrhagic Stroke**

- Hemorrhagic Stroke introduction, risk factors and outcomes
- Intracerebral Hemorrhage Pathophysiology and diagnosis
- ICH score, hematoma expansion, reversal strategies
- ICH/IPH/IVH Management
- ICH Surgical Management
- AVM Background and management
- SAH background, pathophysiology, and diagnosis
- Aneurysmal SAH grading scales (Hunt & Hess, WFNS, Fisher)
- SAH Management
- Management of Intracranial Pressure

## **Neurointerventional procedural management: Diagnostic cerebral angiography**

- Cerebral Angiography 101
- Tools and Techniques
- Angiography and imaging
- Angiographic findings

## **Neurointerventional procedural management: Thrombectomy, carotid stenting, and ischemic interventions**

- Mechanical thrombectomy trials, intraprocedural management, post-procedural management
- Endovascular treatment of Atherosclerotic Disease

**Neurointerventional procedural management Embolization and Hemorrhagic Stroke**

- Aneurysm and AVM embolization management
- Balloon Test Occlusion (BTO) and cerebral vasospasm interventions

**Neurointerventional Procedures and Care: Venous Thrombosis, Tumor Embolization and Others**

- Cerebral Venous Thrombosis treatment
- Chronic subdural hemorrhage treatment
- Epistaxis embolization
- Interior Petrosal Sinus Sampling
- Uncommon procedures: Meningioma Embolization, Halo Angiograph-Gamma Knife

**Peri-Procedural Complications and Management**

- Vessel perforation and aneurysm rupture
- Iatrogenic vessel dissections and vessel spasm
- Intracranial thrombus formation and embolic events
- Access site complications: Femoral, Radial
- Contrast media associated complications
- Ionizing Radiation
- Venous Thromboembolism
- Complications associated with Urinary Catheters