

NET SMART-Advanced Practice (AP) CURRICULUM
Course Content in Sequence

Module	Content
<p><u>Module 1:</u> Introduction to Acute Stroke</p>	<p>This introductory module will review stroke typology and pathophysiology, methods for clinical trial design in stroke and evidence quality, findings from pivotal epidemiologic studies in stroke, common risk factors for stroke and assignment of pathogenic mechanism.</p> <ul style="list-style-type: none"> • Introduction of Stroke Typology • Introduction to Clinical Trial Design in Stroke • Significant Studies in Stroke Epidemiology • Risk Factor Assessment & Incidence • Determination of Stroke Pathogenic Mechanism
<p><u>Module 2:</u> Emergency Systems for Acute Stroke Patients – Prehospital, Triage and Emergency Department Management</p>	<p>This module reviews guideline based recommendations for stroke systems of care, along with examples from highly successful programs. Mechanisms to engage widespread community involvement in acute stroke prevention, early recognition and emergent transport for treatment are presented.</p> <ul style="list-style-type: none"> • Prehospital Systems for Acute Stroke – Protocols, Algorithms, Preferential Transport, and Communication Mechanisms • Field and Departmental Triage of Stroke Emergencies • Emergency Assessment: Priorities, Quality Measures, and Practitioner/Systems Alignment • Laboratory Diagnostics for Treatment Decision Making • Innovative Telemedicine and Prehospital Emergency Assessment/Management Approaches • Engaging the Community in Stroke Prevention and Recognition • Legislative Efforts for Stroke
<p><u>Module 3:</u> Clinical Localization of Stroke: Integrated Anatomy, Physiology and Assessment</p>	<p>This module provides Fellows with an understanding of the anatomy and physiology of the central nervous system in relation to signs and symptoms suggestive of acute stroke. Fellows will learn how to clinically localize strokes by the presentation of findings suggestive of particular vascular territories in the brain. The module concludes with a review of standardized stroke scales and how these support ongoing neurologic and functional assessment in stroke.</p> <ul style="list-style-type: none"> • Vascular Territories of the Brain • Anatomy, Physiology and Correlated Clinical Assessment • Localizing Lesions by Clinical Examination

	<ul style="list-style-type: none"> Standardized Stroke Scales
<p><u>Module 4:</u> CT Imaging in Acute Stroke</p>	<p>This module reviews the utility of computed tomography (CT) in acute stroke. Anatomic correlation on CT, and ischemic and hemorrhagic stroke imaging findings are presented.</p> <ul style="list-style-type: none"> Introduction to CT Guide to Interpretation of CT Differentiation of Lesions by Vascular Distribution Distinguishing Hemorrhage from Ischemia Hypodensities and Changes Associated with Ischemia
<p><u>Module 5:</u> MRI Imaging in Acute Stroke</p>	<p>This module reviews the utility of magnetic resonance imaging (MRI) in acute stroke. Fellows will learn different MRI sequences (T1, T2, DWI, ADC, FLAIR, GRE, PWI), and be introduced to anatomic correlates.</p> <ul style="list-style-type: none"> Introduction to MRI Guide to Interpretation of MRI Differentiation of Lesions by Vascular Distribution Distinguishing Hemorrhage from Ischemia
<p><u>Module 6:</u> Multi-Modal Angiographic and Perfusion Imaging</p>	<p>This module explores multi-modal angiography techniques, including the use of CT angiography (CTA) and perfusion (CTP), MR angiography (MRA) and perfusion (MRP), and digital subtraction angiography (DSA).</p> <ul style="list-style-type: none"> Introduction to Multi-Modal Angiographic and Perfusion Techniques Guide to Interpretation of Angiography and Perfusion Studies Limitations of Angiographic Approaches
<p><u>Module 7:</u> Ultrasound (Carotid & Vertebral Duplex, TCD) in Acute Stroke</p>	<p>This module covers use of ultrasound imaging in acute stroke, and determination of pathogenic mechanism and secondary prevention needs.</p> <ul style="list-style-type: none"> Utility of Ultrasound in Acute Stroke Management Extracranial Duplex Transcranial Doppler Assessment: Occlusions/Stenoses, Vasospasm, Intracranial Pressure and Brain Death Ultrasound as a Complimentary Modality to MRI, CT and Angiography
<p><u>Module 8:</u> Indications for and Administration of Reperfusion Therapy</p>	<p>This module covers current evidence based guidelines supporting reperfusion therapy with intravenous tPA (IV-tPA) and for intra-arterial rescue. Fellows will learn indications, dosages, and common pitfalls in administration of thrombolytic treatment and reperfusion strategies for stroke.</p> <ul style="list-style-type: none"> Reperfusion Methods and Treatment Selection

	<ul style="list-style-type: none"> • Reperfusion Sequela: Prevention and Detection of Intracranial Hemorrhage and Oropharyngeal Edema • Monitoring Recanalization and Clinical Improvement • Evolving Reperfusion Science
<p><u>Module 9:</u> Management of Intracranial Hemorrhage and Neurocritical Care for Stroke</p>	<p>This module covers current and experimental approaches to the management of intracranial hemorrhage, while also introducing Fellows to concepts central to the management of neurocritical care stroke patients.</p> <ul style="list-style-type: none"> • Hemodynamic Monitoring in the Critical Care Unit • Mechanical Ventilation: Modes and Methods • Management of Intraparenchymal and Subarachnoid Hemorrhage • Common Neurocritical Care Procedures and Practices for Ischemic and Hemorrhagic Stroke • Craniectomy and Hypothermia
<p><u>Module 10:</u> Complications of Stroke: Prevention, Recognition and Management</p>	<p>Major and common complications of both ischemic and hemorrhagic strokes will be reviewed along with the protocols for monitoring, detection and treatment to prevent those complications. Special emphasis is paid to aspiration pneumonia, skin breakdown, contractures, deep vein thrombosis, post-stroke depression, urinary tract infections, stress ulcers, and malnutrition.</p> <ul style="list-style-type: none"> • Risk Factors for Stroke-Related Complications • Prevention, From Field Through Hospital Management • Early Recognition of Complications • Medical and Nursing Management of Complications
<p><u>Module 11:</u> Secondary Stroke Prevention</p>	<p>Early institution of secondary stroke prevention treatment and discharge on appropriate medications will be reviewed. Compliance issues, as well as current indications for the use of specific agents is discussed.</p> <ul style="list-style-type: none"> • Hypertension Management in Acute Stroke • Physiologic Actions and Selection of Antithrombotic Agents (Antiplatelets and Anticoagulation) • Statins for Secondary Prevention • Glucose Control • Smoking Cessation
<p><u>Module 12:</u> Stroke Units and Stroke Center Certification (OPTIONAL)</p>	<p>Content is presented on Stroke Unit organization, including methods to reconfigure existing space, staffing, and work process. Preparation for Stroke Center leadership and certification is discussed.</p> <ul style="list-style-type: none"> • Inside the Stroke Unit: System Requirements for Optimal Organization • Stroke Center Quality Measures and Assessing Readiness for Certification

<p><u>Module 13:</u> Advanced Practice Leadership for Acute Stroke</p>	<p>This course presents content on innovative approaches to quality management of stroke programs, including building a program of research, models for advanced practitioner leaders, and methods to build support through staff ownership of overall program quality.</p> <ul style="list-style-type: none">• Models for Stroke Center Advanced Practice• Personal Practice Improvement Strategies: Measuring Quality and Initiating Research• Mentoring Interdisciplinary Staff in Quality and Research Efforts
<p><u>On-Site Clinical Validation</u></p>	<p>The 7-day clinical preceptorship focuses on validation of content learned during completion of the NET SMART modules. Fellows will complete a number of clinical rotations and experiences with expert clinical faculty and receive ongoing performance feedback.</p>