

# I: Neurological/ Neurosurgical

Major Competency Area: **I**  
**Neurological/Neurosurgical**

Competency: **I-1**  
**Neurological Nursing**

Date: June 1, 2015

A Licensed Practical Nurse will:

- I-1-1 Demonstrate knowledge and ability to apply critical thinking and critical inquiry throughout the nursing process in neurological nursing.**
- I-1-2 Demonstrate knowledge and understanding of anatomy, physiology and pathophysiology related to illness/trauma of the neurological system including:**
- determinants of normal neurological function
  - neurological impairment, shock
  - neurological illness, trauma and surgery including:
    - brain and spinal tumors
    - carotid endarterectomy
    - Guillian-Barre syndrome
    - intracranial hemorrhage
    - increased intracranial pressure
    - meningitis
    - neurosurgery
    - seizures and epilepsy
    - stroke
    - transient ischemic attack
    - traumatic head injury
    - traumatic spinal cord injury
- I-1-3 Demonstrate knowledge and ability to provide health teaching and coaching associated with neurological nursing.**
- I-1-4 Demonstrate knowledge and ability to communicate and collaborate with inter-professional team.**

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Competency: **I-2**  
**Neurological**  
**Nursing Interventions**

Date: June 1, 2015

A Licensed Practical Nurse will:

- I-2-1 Demonstrate knowledge and ability to provide evidence informed, client centered care in relation to neurological nursing:**
- ensure and respect client choices in decision making
  - assess, monitor and evaluate neurological vital signs:
    - cranial nerve assessment
    - motor assessment
    - sensory assessment
    - reflex assessment
- I-2-2 Demonstrate knowledge and ability to apply principles of pharmacokinetics and pharmacodynamics specific to medication management in neurological nursing.**
- I-2-3 Demonstrate knowledge and understanding of indications, contraindications and complications associated with neurological and related diagnostic tests and procedures including:**
- cerebral angiogram
  - computerized tomography (CT)
  - CT Angiogram
  - electroencephalography (EEG)
  - magnetic resonance angiography (MRA)
  - magnetic resonance imaging (MRI)
  - ultrasonogram (carotid Doppler, transcranial Doppler)
  - X-ray
  - electromyography (EMG)
  - nerve conduction studies
  - lumbar puncture
  - myelography
  - electrocardiography (ECG)
  - echocardiogram
  - transesophageal echocardiogram (TEE)

A Licensed Practical Nurse will:

- I-2-4            Demonstrate knowledge and ability to anticipate and recognize actual or potential immediate or urgent neurological crisis including:**
- abnormal respirations
  - bradycardia
  - cardiac dysrhythmias
  - decreased level of consciousness
  - hypertension
  - hyperthermia
  - hypotension
  - hypothermia
  - tachycardia
  - widening pulse pressure
- I-2-5            Demonstrate knowledge and ability to recognize signs and symptoms of a life threatening neurological event and implement interventions according to agency policy.**

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Competency: **I-3**  
**Managing C-Spine**

Date: June 1, 2015

A Licensed Practical Nurse will:

- I-3-1 Demonstrate knowledge and ability to assess for spinal injury.**
- I-3-2 Demonstrate knowledge of best practices in cervical spine management and implementation according to agency policy.**
- I-3-3 Demonstrate knowledge of criteria for spinal immobilization and spinal precautions including:**
- neck/back pain with or without nerve involvement
    - history of:
      - degenerative bone disease
      - falls
      - head, neck or facial trauma
      - motor vehicle crash
      - trauma with intoxication, altered mental status or unconsciousness
- I-3-4 Demonstrate knowledge and ability to apply and maintain spinal precautions including:**
- application, maintenance and removal of cervical collars (soft, rigid)
  - assist to stabilize spine with manual and/or mechanical traction
  - logrolling
  - maintain proper spinal/body alignment
  - transportation precautions
  - use of spine board/slider board
- I-3-5 Demonstrate knowledge and ability to provide nursing care and interventions specific to client with spinal injury including:**
- motor power/sensation/neurovascular status
  - skin care and institute protective measures
  - wounds, drainage tubes
  - nutrition/hydration/elimination
  - intake and output balance
  - casts, halo traction, thoracolumbosacral orthosis
  - comfort measures and pain management

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Competency: **I-4**  
**Advanced Neurological  
Nursing Interventions**

Date: June 1, 2015

A Licensed Practical Nurse will:

**I-4-1 Demonstrate knowledge and ability to care for client requiring detailed observation and interventions according to agency policy.**

**I-4-2 Demonstrate knowledge and ability to assist with and/or provide advanced neurological assessment, monitoring, care and interventions according to agency policy including:**

- 12 and 15 lead ECG application and interpretation
- acid-base balance
- acute pain management
- advanced swallowing assessment
- arterial blood gas analysis
- arterial line monitoring
- cerebellar function testing
- chest assessment and physiotherapy
- cognitive functioning assessment
- cranial nerve assessment
- fluid and electrolyte imbalance monitoring
- lumbar drain monitoring
- pressure monitoring
  - central venous pressure monitoring
  - intra-arterial line monitoring
  - intra-cranial pressure monitoring
- spinal assessment
- ventricular and subdural drain monitoring

**I-4-3 Demonstrate knowledge and ability to communicate, consult and collaborate with inter-professional team.**