

## V: Infusion Therapy

**Please note:** Competencies within this section of the Profile are to be taken in consideration with competencies outlined throughout this document and are not intended to be standalone.

**Important:** LPNs are responsible to ensure they have any required education or training and the individual competence prior to performing these competencies.

Major Competency  
**V: Infusion Therapy**

Competency  
**V-1: Principles and Administration of Infusion Therapy**

Competency Statement - A Licensed Practical Nurse will:

**V-1-1 Demonstrate knowledge of principles of infusion therapy related to:**

- circulatory system
  - arterial
  - venous
- blood and blood products
- chemotherapy
- fluid and electrolyte maintenance, restoration, and replacement
- infection prevention and control
- medications and nutritional feedings

**V-1-2 Demonstrate knowledge of principles of peripheral lines, central lines, implanted ports, spinal, epidurals, and patient controlled analgesia.**

**V-1-3 Demonstrate knowledge and ability to manage peripheral intravenous infusion therapy:**

- initiate, monitor, regulate, lock discontinue
  - assemble and prime lines
  - calculate infusion rates
  - patient safety
  - infusion equipment
  - administration of fluids and medications
  - treatment evaluation

**V-1-4 Demonstrate knowledge and ability to manage patient controlled analgesia pump (PCA pumps):**

- initiate, regulate, monitor
- lock, discontinue

**V-1-5 Demonstrate knowledge and ability to manage complications of peripheral intravenous therapy:**

- air emboli
- allergic reactions
- dehydration or hypervolemia
- equipment problems
- infection
- infiltration or extravasation
- phlebitis or thrombophlebitis

**V-1-6 Demonstrate knowledge and ability to manage hypodermoclysis infusion:**

- initiate, monitor, regulate, lock discontinue
  - assemble and prime lines
  - calculate infusion rates
  - patient safety
  - infusion equipment and pump
  - administration of fluids and medications

**V-1-7 Demonstrate knowledge and ability to manage complications of hypodermoclysis infusion:**

- allergic reactions
- edema
- equipment problems
- fluid or medication error
- hypervolemia
- infection
- localized pain
- infiltration or extravasation

Major Competency  
**V: Infusion Therapy**

Competency  
**V-2: Central Line Management**

Competency Statement - A Licensed Practical Nurse will:

**V-2-1 Demonstrate knowledge of central venous catheter (CVC) lines and clinical application:**

- tunneled and non-tunneled
- peripheral or percutaneous (PICC)
- subcutaneous port or implanted vascular access device (IVAD)

**V-2-2 Demonstrate knowledge and ability to recognize and manage risks associated with central lines:**

- abnormal heart rate or rhythm
- line blockage
- brachial plexus injury
- embolus or thrombus
- faulty or fractured device
- hemorrhage and hematoma
- incorrect placement
- infection and sepsis

**V-2-3 Demonstrate knowledge and ability to recognize and manage risks associated with removal of central venous catheters:**

- abnormal heart rate or rhythm
- embolus or thrombus
- brachial plexus injury
- faulty or fractured device
- hemorrhage and hematoma
- infection and sepsis

**V-2-4 Demonstrate knowledge and ability to monitor and manage central lines according to employer requirements:**

- dressing changes
- cap and tubing change
- flush and lock
- maintain central venous pressure
- administration of fluids
- occlusion issues
- patient controlled analgesia pump (PCA)
- withdraw blood

**V-2-5 Demonstrate knowledge and ability to administer medications (continuous, intermittent, direct) via central venous line according to employer requirements (see Standards of Practice #17, section Z of this document).**

**V-2-6 Demonstrate knowledge and ability to remove non-tunneled central venous catheters according to employer requirements.**

**LPN Profession Regulation:** *section 16 (1) A regulated member who has completed advanced training approved by the Registrar and has been specially authorized to do so by the Registrar on the basis of that training may, in the practice of licensed practical nursing, perform the following restricted activities in accordance with the standards of practice:*

*(b) administering medication by an invasive procedure on body tissue below the dermis for the purpose of administering medication into a central venous line, peripherally inserted central catheter or and implanted venous access device.*

Major Competency  
**V: Infusion Therapy**

Competency  
**V-3: Blood and Blood Products**

Competency Statement - A Licensed Practical Nurse will:

- V-3-1 Demonstrate knowledge of the circulatory system and components of blood and blood products used in transfusion therapy.**
- V-3-2 Demonstrate knowledge of blood typing groups and considerations related to blood cross-matching.**
- V-3-3 Demonstrate knowledge of normal and abnormal lab values pertaining to blood transfusion.**
- V-3-4 Demonstrate knowledge of types of transfusions according to composition and clinical indications:**
- albumin
  - cryoprecipitate
  - factor IX and VIII concentrate
  - immunoglobulin
  - packed red blood cells
  - packed white blood cells
  - plasma (fresh, frozen, and single donor)
  - platelets
  - whole blood
- V-3-5 Demonstrate knowledge and ability to obtain informed consent prior to transfusion of blood products, understanding and respecting:**
- ethical, cultural, and religious beliefs
  - legal right to refuse
- V-3-6 Demonstrate knowledge and ability to prepare and administer blood and blood products via transfusion (See Standard of Practice #6, section Z of this document):**
- obtain blood or blood products
  - check blood or blood products with another authorized professional
  - set up and prime infusion lines
  - monitor, regulate, and discontinue
- V-3-7 Demonstrate knowledge and ability to identify and manage a reaction to blood or blood products:**
- anaphylaxis
  - abdominal pain or nausea
  - acute respiratory condition (dyspnea, pulmonary)
  - chest, flank, or back pain
  - circulatory overload
  - elevated blood pressure
  - embolus
  - fever or chills
  - altered mental state (anxious, drowsy)
  - altered skin color and appearance (urticaria, jaundice)
  - urine output and color

Major Competency  
**V: Infusion Therapy**

Competency  
**V-4: Epidural and Spinal Infusion**

Competency Statement - A Licensed Practical Nurse will:

**V-4-1 Demonstrate knowledge of epidural and spinal infusion therapy:**

- regional anesthesia (pain block)
- infusion rates
- patient safety
- infusion equipment
- neurological assessment
- fluids and medications

**V-4-2 Demonstrate knowledge and ability to manage problems and complications of epidural and spinal infusion therapy:**

- abnormal lab values
- allergic and adverse reactions
- equipment issues, line occlusion, or disconnection
- hemorrhage
- fever or infection
- infiltration
- inadequate analgesia
- respiratory depression
- urinary retention
- hypotension
- post epidural cerebrospinal fluid leak

**V-4-3 Demonstrate knowledge and ability to manage patient care following epidural or spinal infusion therapy.**

**V-4-4 Demonstrate knowledge and ability to monitor and regulate epidural infusions.**

**Note: Licensed Practical Nurses are not authorized to initiate or remove epidural and spinal catheters.**

Major Competency  
**V: Infusion Therapy**

Competency  
**V-5: Peritoneal Dialysis**

Competency Statement - A Licensed Practical Nurse will:

**V-5-1 Demonstrate knowledge of indications and risks associated with peritoneal dialysis.**

**V-5-2 Demonstrate knowledge and ability to monitor and manage peritoneal catheter site.**

**V-5-3 Demonstrate knowledge and ability to perform procedures involved in peritoneal dialysis:**

- initiate, monitor, and discontinue
- intra-peritoneal medication administration

**V-5-4 Demonstrate knowledge and ability to calculate patient's creatinine and urea clearance.**

Major Competency  
**V: Infusion Therapy**

Competency  
**V-6: Hemodialysis**

Competency Statement - A Licensed Practical Nurse will:

**V-6-1 Demonstrate knowledge and understanding of the dialysis (hemodialysis) restricted activity in the Health Professions Act's Licensed Practical Nurses (LPN) Profession Regulation.**

**V-6-2 Demonstrate knowledge and ability to provide dialysis (hemodialysis) in accordance with professional legislation, regulation, CLPNA standards and any applicable guidelines (see Standards of Practice #16, section Z of this document).**

***LPN Profession Regulation: section 16 (1) A regulated member who has completed advanced training approved by the Registrar and has been specially authorized to do so by the Registrar on the basis of that train may, in the practice of licensed practical nursing, perform the following restricted activities in accordance with the standards of practice:***  
***(a) inserting or removing instruments, devices, fingers or hands into an artificial opening into the body for the purposes of performing dialysis.***

**V-6-3 Demonstrate knowledge of anatomy, physiology, and pathophysiology associated with the disease process of acute and chronic renal insufficiency.**

**V-6-4 Demonstrate knowledge and understanding of principles of hemodialysis equipment management:**

- osmosis, diffusion, ultrafiltration
- identify, respond, and report equipment issues and alarms
- assembly of equipment and hemodialysis circuit
- infection prevention and control standards
- monitor water treatment process

**V-6-5 Demonstrate knowledge and ability to assess and maintain hemodialysis access:**

- arteriovenous fistula (AV fistula)
- central venous catheters (jugular, subclavian, femoral)
- arteriovenous graft (AV graft)

**V-6-6 Demonstrate knowledge and ability to initiate, monitor, and discontinue hemodialysis treatment according to employer requirements.**

Major Competency  
**V: Infusion Therapy**

Competency  
**V-6: Hemodialysis**

Competency Statement - A Licensed Practical Nurse will:

**V-6-7 Demonstrate knowledge and ability to assess and manage complications associated with hemodialysis:**

- anaphylaxis
- hypoglycemia or hyperglycemia
- cardiac dysrhythmia, angina, cardiac arrest
- disequilibrium syndrome (neurological deficits)
- dehydration or hypervolemia
- edema (periorbital, peripheral, sacral)
- electrolyte abnormalities
- encephalopathy
- fatigue or lethargy
- hemorrhage, thrombosis, aneurysm
- hypotension or hypertension
- infection (site, systemic, peritonitis)
- nausea, vomiting, diarrhea
- pericarditis, pericardial effusion, tamponade
- peripheral ischemia, neuropathy, neuropathic pain
- peripheral vascular disease
- renal osteodystrophy
- respiratory distress
- uremic pruritis

**V-6-8 Demonstrate knowledge and ability to provide treatments, interventions, and education to hemodialysis patients:**

- monitoring and discontinuation of blood and blood product infusion
- care of vascular access (central, fistula, graft)
- renal diet and fluid and electrolyte management
- immunizations
- medication management
- obtain samples and specimens