

## H: Orthopedics

**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  
**H: Orthopedics**

Competency  
**H-1: Orthopedic Nursing and Interventions**

Competency Statement - A Licensed Practical Nurse will:

**H-1-1 Demonstrate knowledge of anatomy, physiology, and pathophysiology related to the musculoskeletal system:**

- determinants of normal structure and function
- symptoms indicating immediate and urgent need for intervention
- infection prevention, risks, exposure, and management
- indicators of illness, impairment, or trauma

**H-1-2 Demonstrate knowledge and ability to assess and manage nursing care for conditions and injuries of the musculoskeletal system.**

**H-1-3 Demonstrate knowledge and ability to apply principles of pharmacokinetics and pharmacodynamics specific to medication management of orthopedic patients.**

**H-1-4 Demonstrate knowledge of orthopedic diagnostic tests and nursing implications:**

- arthrogram
- blood tests
- bone scan
- computed tomography (CT scan)
- discography
- Doppler studies
- electromyography (EMG)
- magnetic resonance imaging (MRI)
- myelogram
- radiography

**H-1-5 Demonstrate knowledge and ability to assess and manage ambulation and immobilization needs:**

- braces and splints
- canes, crutches, walkers, wheelchairs
- external fixators
- mechanical lifts
- nutritional status
- pain management
- protective devices
- traction

Major Competency  
**H: Orthopedics**

Competency  
**H-2: Traction and Immobilizers**

Competency Statement - A Licensed Practical Nurse will:

- H-2-1 Demonstrate knowledge of indications and contraindications associated with use of traction and immobilizers.**
- H-2-2 Demonstrate knowledge and ability to assess and manage patient with traction and immobilization devices:**
- mobilization considerations
  - complications (compartment or compression syndrome, infection, bleeding)
  - neurovascular status
    - color, temperature, edema, movement, pulse, sensation (CTEMPS)
  - pain assessment
- H-2-3 Demonstrate knowledge and ability to assess and manage cast care:**
- bivalving
  - trimming and removing
  - windowing
  - univalving
- H-2-4 Demonstrate knowledge and ability to fit and apply pre-formed removable splints and braces:**
- adjustable knee braces (Zimmer splints)
  - clam shells
  - half slabs and back slabs
  - soft cervical collars
- H-2-5 Demonstrate knowledge and ability to manage nursing care for patient with traction or external fixators:**
- bucks
  - halo
  - manual
  - pin site
  - skeletal
  - skin
- H-2-6 Demonstrate knowledge of indications and contraindications associated with care of c-spine injury.**
- H-2-7 Demonstrate knowledge and ability to cut, form, and apply removable resting splint or immobilizer.**

Major Competency  
**H: Orthopedics**

Competency  
**H-3: Advanced Practice Orthopedic Nursing**

Competency Statement - A Licensed Practical Nurse will:

**Note:** Licensed Practical Nurses in Alberta must successfully complete Council approved education and have advanced authorization by the CLPNA Registrar to practice in the area of Advanced Practice Orthopedic Nursing. (See Standards of Practice #23, section Z of this document).

**H-3-1** Demonstrate knowledge and understanding of restricted activities related to orthopedic nursing in the Health Professions Act's Licensed Practical Nurses Profession Regulation.

**H-3-2** Demonstrate knowledge and ability to provide LPN advanced practice orthopedic nursing care in accordance with professional legislation, regulation, CLPNA standards of practice, and guidelines.

**LPN Profession Regulation:** *section 17 A regulated member who has completed advanced training approved by the council and has been specifically authorized to do so by the Registrar on the basis of that training may, in the practice of licensed practical nursing and in accordance with the standards of practice, perform the restricted activity of setting or resetting a fracture of a bone for the purposes of inserting and removing orthopaedic devices and applying casts if:*

- (a) the regulated member has direction from an authorized practitioner, and*
- (b) an authorized practitioner is on site and available to provide assistance.*

Major Competency

**H: Orthopedics**

Competency

**H-3: Advanced Practice Orthopedic Nursing**

Competency Statement - A Licensed Practical Nurse will:

**H-3-3 Demonstrate advanced knowledge of human anatomy and physiology related to pediatric and adult orthopedic care:**

- associated terminology
- body systems
- body planes and directions
- range of motion and limb positioning

**H-3-4 Demonstrate knowledge of musculoskeletal conditions and treatment associated with:**

- arthritis
  - rheumatoid
  - osteo (degenerative)
  - gout
  - psoriatic
  - lupus
  - septic
  - juvenile
- inflammation and infection
  - ankylosing spondylitis and spondylolisthesis
  - bursitis
  - cellulitis
  - epicondylitis
  - myositis (muscle)
  - osteomyelitis and osteitis
  - synovitis
  - tendonitis and tenosynovitis
- soft tissue injury
  - contusion, strain or sprain, repetitive injury
    - ligamentous
    - labral
    - tendinous
    - fibrocartilaginous
- trauma
  - fractures and bone healing
  - dislocations
  - growth plate injuries
  - compartment syndrome
  - fat or pulmonary embolism
- other
  - amputation
  - osteoporosis
  - congenital disorders
  - kyphosis and scoliosis
  - contractures and deformities
  - growths and tumors
  - Gillian Barre Syndrome
  - Charcot's Foot

**H-3-5 Demonstrate knowledge and ability to perform a holistic ongoing assessment of pediatric and adult orthopedic patients.**

**H-3-6 Demonstrate knowledge and ability to manage complications associated with immobility and ambulation of orthopedic patients.**

**H-3-7 Demonstrate knowledge and ability to use a goniometer to assess initial and subsequent range of motion related to musculoskeletal injury and recovery process.**

Major Competency

**H: Orthopedics**

Competency

**H-3: Advanced Practice Orthopedic Nursing**

Competency Statement - A Licensed Practical Nurse will:

**H-3-8 Demonstrate ability to distinguish between a variety of x-ray views:**

- posterioranterior (PA)
- anteroposterial (AP)
- axillary
- lateral
- medial
- mandibular
- panoramic
- oblique
- transverse
- tunnel

**H-3-9 Demonstrate knowledge and ability to assemble, apply or assist in application and removal of orthopedic devices:**

- compression wrap
  - Tensor bandage
  - Tubigrip
  - elastic support stockings
- slings and immobilizers
  - acromioclavicular harness
  - clavicular strap
  - collar and cuff sling
- braces and splints
  - cervical (soft and rigid)
  - humeral
  - wrist and hand
  - knee
- spinal
- pelvic (Pavlik harness)
- femoral and tibial
- foot and ankle
- traction
  - skin and skeletal
  - balanced suspension traction
  - Balkan frame
  - Bryant of Gallows traction
  - Bucks
  - Gardner Wells tongs
  - Kirschner wires
  - Steinmann pin

**H-3-10 Demonstrate knowledge of cast and splint construction, application, care, and removal:**

- above and below joint
- weight bearing and non-weight bearing
- back slabs
- cylinder casts
- functional cast therapy
- gutter splints
- hip spica
- patella tendon bearing
- plaster and fiberglass casts
- sugar tong splint
- total contact casting
- volar slabs
- waterproof casting
- wedging