J: Cardiovascular
A Licensed Practical Nurse will:

**J-1-1** Demonstrate knowledge and ability to apply critical thinking and critical inquiry throughout the nursing process in cardiovascular nursing.

**J-1-2** Demonstrate knowledge and understanding of anatomy, physiology and pathophysiology of the cardiovascular system and cardiovascular disease including:
- determinants of normal cardiac cycle and cardiac conduction pathway
- cardiovascular diseases and disorders
  - atherosclerosis
  - cardiac dysrhythmias
  - cardiac valve disease (insufficiency/stenosis)
  - cardiomyopathy
  - congenital heart disease/anomaly
  - pericarditis/myocarditis/endocarditis
  - heart failure
  - hypercholesterolemia/dyslipidemia
  - hyper/hypotension
  - ischemic heart disease
  - peripheral artery disease
- determinants of blood pressure and central venous pressure
- decompensation, shock, hypovolemic shock, cardiac failure
- single and multiple organ system failure

**J-1-3** Demonstrate knowledge and ability to provide health teaching and coaching associated with cardiovascular nursing.

**J-1-4** Demonstrate knowledge and ability to communicate and collaborate with inter-professional team.
A Licensed Practical Nurse will:

J-2-1 Demonstrate knowledge and ability to provide evidence informed, client centered care in relation to cardiovascular nursing:
- ensure and respect client choices in decision making
- assess and monitor:
  - hemodynamics
  - lab values/biochemical markers
  - limb temperature
  - peripheral diagnostic and interventional procedures
  - renal sufficiency
  - venous thromboembolism (sequential compression device therapy)
  - vital signs
- differentiate normal rhythm and arrhythmia
- prepare client for diagnostic tests, procedures, treatments and/or surgery
- implement pre/post procedure routines and protocols

J-2-2 Demonstrate knowledge and ability to utilize cardiac equipment:
- apply 3 and 5 lead electrocardiogram (ECG)
- apply telemetry equipment
- resuscitation equipment:
  - automated external defibrillator (AED)
  - bag and mask
  - crash cart
- understand use of:
  - external cardiac pacing
  - pacemaker sensing, on/off
  - 24 hour Holter monitor
  - Doppler imagery/echocardiography
  - central venous pressure (CVP) and arterial lines
A Licensed Practical Nurse will:

J-2-3 **Demonstrate knowledge and understanding of normal/abnormal lab values and cardiac markers:**
- Aspartate transaminase (AST)
- Creatine Kinase (CK-MB)
- Ischemia-Modified Albumin (IMA)
- Lactate Dehydrogenase (LDH)
- Myoglobin (Mb)
- Natriuretic Peptides: BNP/or NT-proBNT
- Troponin I test

J-2-4 **Demonstrate knowledge and ability to apply principles of pharmacokinetics and pharmacodynamics specific to medication management in cardiovascular nursing according to agency policy.**

J-2-5 **Demonstrate knowledge and understanding of indications, contraindications and complications associated with cardiovascular and related diagnostic tests and procedures including:**
- angiogram (radial, femoral)
- angioplasty and stents
- coronary artery bypass grafting (CABG)
- echocardiogram (trans-thoracic, trans-esophageal)
- exercise stress test
- radionuclide angiography:
  - MIBI Scan (Cardiolite, Persantine)
  - multiple gated acquisition (MUGA)
  - Thallium Scan
- right heart catheterization
- tilt test

J-2-6 **Demonstrate knowledge and ability to anticipate and recognize actual or potential immediate life threatening health crisis including:**
- alteration in cardiac output
- alteration in vascular tissue perfusion (compartment syndrome)
- cardiac arrhythmias
- cardiac tamponade
A Licensed Practical Nurse will:

**J-2-6**  Demonstrate knowledge and ability to anticipate and recognize actual or potential immediate life threatening health crisis including: (cont’d)
- cardiomyopathy
- congenital heart defect
- congestive failure
- myocardial infarction
- shock

**J-2-7**  Demonstrate knowledge and ability to recognize signs and symptoms of a life threatening cardiac event and implement or assist with cardio pulmonary resuscitation according to agency policy.
A Licensed Practical Nurse will:

**J-3-1** Demonstrate knowledge and ability to care for client requiring detailed observation and interventions including:
- hemodynamic monitoring
  - central venous pressure monitoring (CVP)
  - peripherally inserted central catheter care (PICC) (Competency V-4)
  - arterial line monitoring
- non-invasive and mechanical ventilation

**J-3-2** Demonstrate knowledge and ability to assist with and/or provide cardiac procedures, treatments, therapies and interpretation of diagnostic and lab values:
- 12 and 15 lead ECG application and interpretation
  - rhythm, rate, P-wave configuration, PR interval, QRS duration/configuration, inversion, flattening, other wave anomalies
- atrial fibrillation protocol
- monitor and manage symptoms of arrhythmia and cardiac tamponade
- monitor and remove radial bands
- monitor femoral sheaths and epicardial pacing wires

**J-3-3** Demonstrate knowledge and understanding of indications for use of external cardiac pacing and implanted cardiac devices:
- monitor telemetry equipment
- apply 24hr Holter monitor
- recognize complications of external pacemaker and implantable cardioverter defibrillator (ICD)
  - failure to output
  - failure to capture
  - sensing abnormalities