

**CONSIDERATIONS:**

1. Pacemakers and implantable cardioverter defibrillators (AICDs) stimulate and coordinate the electrical activity of the heart so the heart's chambers pump when and how they should. These devices can:
  - a. Speed a bradycardic rate
  - b. Slow a tachycardic rate
  - c. Prevent and control dangerous arrhythmias
  - d. Keep ventricles contracting normally, even during atrial fibrillation
  - e. Coordinate the pumping of atria and ventricles
  - f. Coordinate the pumping of the ventricles with cardiac resynchronization therapy (CRT), used for heart failure patients
  - g. Monitor and record the heart's activity
2. Pacemakers and AICDs can be stand-alone devices, or can be combined into one device. A pacemaker uses low-energy pulses, and an AICD provides a preprogrammed high energy pulse if tachycardia or fibrillation occurs.
3. Types of pacemakers include:
  - a. Number/placement of leads:
    - i. Single chamber: right ventricle
    - ii. Dual chamber: right atria and ventricle
    - iii. Biventricular: right and left ventricles
  - b. Type of programming:
    - i. Demand: sends pulse if rate is too slow
    - ii. Rate responsive: monitors level of activity, changing rate with level of activity
4. Clinician responsibilities for patients with a pacemaker or an AICD:
  - a. Post-surgical:
    - i. Monitor for signs/symptoms of infection, bleeding or placement problems
    - ii. Provide post-surgical incision care
    - iii. Instruct on taking pulse and signs and symptoms device is not working properly
    - iv. Review precautions of having a device
  - b. Patient with established pacemaker/AICD:
    - i. Monitor for/and assure patient knows how to identify signs/symptoms of pacemaker or cardiac problems
    - ii. Review patient knows how to take pulse and identify parameters for contacting physician

1. Adhere to Standard Precautions and perform standard nursing assessment of cardio-pulmonary post-surgical patient.
2. Assess insertion site for:
  - a. Pain or discomfort
  - b. Bruising, bleeding, swelling, and inflammation
3. Palpate around the device and its "pocket" for:
  - a. Tenderness or pain
  - b. Fluid or unusual swelling/hardness
4. Teach that until cleared by physician to:
  - a. Limit movement of affected upper extremity
  - b. Keep incision site clean and dry, no showers
5. Instruct on Signs/Symptoms of Malfunction:
  - a. Instruct patient/caregiver to take full minute pulse each day, and to notify the physician if pulse < 60 or > 100 (or other parameters established by physician)
  - b. Instruct patient/caregiver to notify physician for any:
    - i. Episodes of dizziness or faintness
    - ii. Persistent hiccoughs (lead wires affecting diaphragm)
    - iii. "Kicks" in chest (AICD firing)

**AFTER CARE:**

1. Document:
  - a. Post-surgical assessment findings including surgical site and pace maker pocket site status
  - b. Cardiopulmonary status, including apical pulse
  - c. Symptoms reported by patient
  - d. Any teaching provided to patient/caregiver
  - e. Any communication with physician
2. Communicate with physician about:
  - a. Parameters for pulse
  - b. Any abnormal signs and symptoms

**REFERENCE:**

National Heart Lung and Blood Institute (2012). Pacemakers and AICDs. Retrieved on June 1, 2012 from <https://www.nhlbi.nih.gov/health/health-topics/topics/pace/>

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Adopted from VNAA; approved Policy Committee 08/13

**EQUIPMENT:**

None

**PROCEDURE:**

Post-Surgical Care