Fundamentals of Pacemaker/ICD Therapy

Management and Care of Implantable Device Patients
This presentation is provided with the understanding that the slide content must not be altered in any manner as the content is subject to FDA regulations.

This presentation is to be used in conjunction with other resource material including the applicable Boston Scientific device physician’s manual and any implant accessories instructions for use.

This presentation is not intended to replace implant training.

Proper surgical procedures and techniques are the responsibilities of the medical professional.

If this presentation is not used in its entirety, the following information must be included:

- Appropriate Indications
- Contraindications
- Warnings
- Precautions and Adverse Events
When we complete this program you will be able to:

- **Describe** the clinical goals of patient care management
- **Identify** patient education teaching tools
- **Prepare** a patient follow-up schedule
- **Recognize** the importance of patient care records
- **Review** patient instructions for EMI precautions
Clinical Goals

- Educate and reassure patient and family
- Optimize clinical effectiveness and longevity
- Monitor the pulse generator and lead function
- Maintain accurate and up-to-date patient records
**Principles of Learning**

- **Assess** the patient’s learning needs
- **Establish** rapport with patient and family members
- **Ensure** appropriate learning environment
- **Prioritize** the information
- **Encourage** active participation
- **Obtain** feedback
Educational Tools

- Instructional Videos
- Audio/Visual Aids
- Written Materials
Education is a continuous process

- Information needs to be repeated

- Provide written instructions

- Always provide contact numbers
Patient Involvement

- Instruct patient on how to check pulse for a full minute
- Inform patient of their lower pacing rate
- Call if heart rate is consistently 10 bpm lower than minimum pacing rate
Signs and Symptoms of Pacemaker Problems

- Instruct patients to call if they experience:
  - Redness or swelling
  - Pain in the incision
  - Fainting
  - Dizziness or lightheadedness
  - Palpitations
Pacemaker and ICD patient follow-up begins before implantation
• Patients actively involved in their care
• Patients accountable for follow-up
• Understand consequences of noncompliance
The frequency of the follow-up will depend on the patient’s individual needs.

Medicare has established some routine pacemaker guidelines for clinic follow-up.

**Single-chamber Pacemakers**

| First 6 months | Twice then every 12 months |

**Dual-chamber Pacemakers**

| First 6 months | Twice then every 6 months |
## Phone Follow-up Schedule

<table>
<thead>
<tr>
<th>First month</th>
<th>Every 2 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 36 months</td>
<td>Every 8 weeks</td>
</tr>
<tr>
<td>After 36 months</td>
<td>Every 4 weeks</td>
</tr>
</tbody>
</table>
Follow-up
Telephonic Pacemaker

- The clinician can receive the telephonic ECG on the receiver
- Strips can be stored on computer program or paper file
- Do pre- and post- magnet strips
Magnet Test

- Pacemaker magnet application
  - Each manufacturer is different
  - May cause asynchronous pacing
  - Check battery
  - Check capture and threshold margin

- Defibrillator magnet application
  - Inhibits therapy
  - May disable ICD
Follow-up
Patient Care Records

- Keep current demographic information on all patients
- Set up database to be able to search by manufacturer and model number
Patient education includes instruction on EMI

Keep electrical appliances grounded and in good repair
No Precautions Needed with ICD / Pacemakers

- Microwave Ovens
- Televisions, VCRs
- AM/FM Radios, CD Players
- Table Top Appliances (toasters, blenders, can openers, etc.)
- Hand-held Appliances (shavers, hair dryers, etc.)
- Electric Blankets, Heating Pads
- Personal Computers
- Fax/Copy Machines
Electromagnetic Interference (EMI)

**Equipment / Tools**

Keep these items **at least 12 inches away**

- Stereo Speakers
- Strong Magnets
- Power Generators
- Arc Welders
- Battery-powered Tools
- Running Engines/Alternators
**Cell Phone Precautions**

Maintain a distance of **at least 6 inches away**

- Hold the cell phone on the opposite side
- Do not carry the active phone near the device
Electromagnetic Interference (EMI)

**Metal Detectors / Security Systems**

- Walk through the systems at a normal pace
- Do not lean against the system
- If scanning with a hand-held metal detector is required
  - Inform the security personnel of the implanted electronic medical device
  - Show implant card
EMI from Medical Devices

- Electrocautery
- Cardioversion
- TENS (Transcutaneous Electrical Nerve Stimulation)
- Radio Frequency Ablation
- Therapeutic Radiation
- Magnetic Resonance Imaging (MRI)
Electromagnetic Interference (EMI) Questions

- Refer to the manufacturer’s device manual
- Manufacturer’s technical services 1-800-CARDIAC
- www.guidant.com
Conclusions

- Patients can lead a normal active lives
- Patients and families recognize the importance of follow-up care
- Patient and family teaching is ongoing