Overview
Implantable cardioverter-defibrillators (ICDs) have been saving lives for more than 30 years by delivering a lifesaving shock or painless pacing to stop life-threatening fast or irregular heartbeats.

- Irregular heartbeats, also known as ventricular arrhythmias, can lead to sudden cardiac death, a condition that kills approximately 350,000 people each year in the United States.¹
- An estimated 650,000 Americans and nearly 1 million patients worldwide have an ICD or cardiac resynchronization therapy-defibrillator (CRT-D) to protect against dangerously erratic heartbeats.²

What Defibrillators Do
- ICDs administer electrical shocks or painless pacing therapy to stop ventricular fibrillation (VF) – a lethal condition in which the heart quivers chaotically and pumps little or no blood.
- ICDs also stop ventricular tachycardia (VT), and other less problematic arrhythmias.
- ICDs collect information physicians can use to program the device to the exact needs of the patient.

Effectiveness
- ICDs are proven to be 98 percent effective in treating dangerous ventricular arrhythmias that can lead to sudden cardiac arrest.³,⁴
- Medtronic estimates more than 70,000 lives have been saved by implantable defibrillators over the past five years.⁵

Implantation and Testing
- Implantation of an ICD takes only about one hour, and sometimes can be done on an outpatient basis.
- Implantation is minimally invasive surgery. A physician injects local anesthesia and makes an incision about four inches long in the upper chest. The ICD is inserted and the leads are maneuvered through a vein into the heart.
- The physician programs the ICD and tests it before closing the incision.

Modern ICDs Are Highly Sophisticated
- They are designed to ensure that impulses are delivered only when needed.
- Today’s devices often deliver pain-free rhythm-regulating therapy without the patient being aware of it.

Who Might Benefit from an ICD?⁶
- People who have intermittent ventricular tachycardia (VT), in which the heart beats suddenly and speeds up to dangerous levels without warning.
- People who have survived an episode of sudden cardiac arrest.
- People who have survived a myocardial infarction (heart attack) and have impaired pumping function in the lower chambers (ventricles).
Underserved Patient Populations

- African-Americans are twice as likely to die as a result of sudden cardiac arrest compared to caucasians\(^7\) and are significantly less likely to receive an ICD.\(^8\)
- Less than 10 percent of elderly patients who survive a heart attack receive an ICD, despite a clear mortality benefit.\(^9\)
- Women with ischemic cardiomyopathy have been found to be 65 percent less likely to receive an ICD compared with men.\(^10\)

How Long Do ICDs last?

- ICDs will effectively guard against sudden cardiac arrest for up to approximately eight to 11 years, depending on the model of the device and the individual patient use.