Abstract—The Implantable Cardioverter Defibrillator (ICD) is a device that will help to prevent abnormalities in beating of the heart. Some abnormalities are ventral tracchycardia, ventral fibrillation, atrial flutter, bradycardia, Brugada syndrome, and Long QT syndrome. The ICD will monitor the heart, and if it senses any of these problems, it will send out shockwaves to correct it. This technology was developed in the by Michael Mirowski.

I. INTRODUCTION

This device was originally tested and refined on animals. It was then introduced to humans in 1980 and finally approved by the FDA in 1985. Currently, ICD’s are very safe and efficient. They are about the size of a Mason jar lid, and can send out different shocks for different abnormalities. There are two wires that can be attached to the ICD, called leads that are attached to the pulse generator of the ICD.

II. METHODS

A single chamber ICD will have only one lead that will go into the ventricle. A dual chamber ICD will have two leads, one in the ventricle and one in the atrium. The pulse generator is placed under the skin and can be placed either below the shoulder area, or in the abdomen, depending on the lifestyle of the patient.

III. RESULTS

In February 2008, the smallest patient ever received the ICD, and has been living a very healthy life since. This patient was a 5 week old infant at 4.9 kg. Patients do not seem to have a problem going back to their everyday lifestyles with the ICD, however, limitations they do have are psychological issues with it. Patients are known to experience fear and anxiety with the ICD. This comes from self consciousness of physical appearance, as well as the forewarning of being shocked if their heart is beating too fast.

IV. DISCUSSION

The ICD is still in development for being used in children. It has been done before, but the operation in children is risky. The ICD can also cost between $10,000 and $100,000. A very wide range in terms of price. Hopefully, in the future, the ICD will become cheaper and smaller for convenience. Also, the ICD will hopefully become safer to use in children so that it can become a primary option rather than a last resort. The ICD is a very interesting and useful device that saves lives every day.

REFERENCES