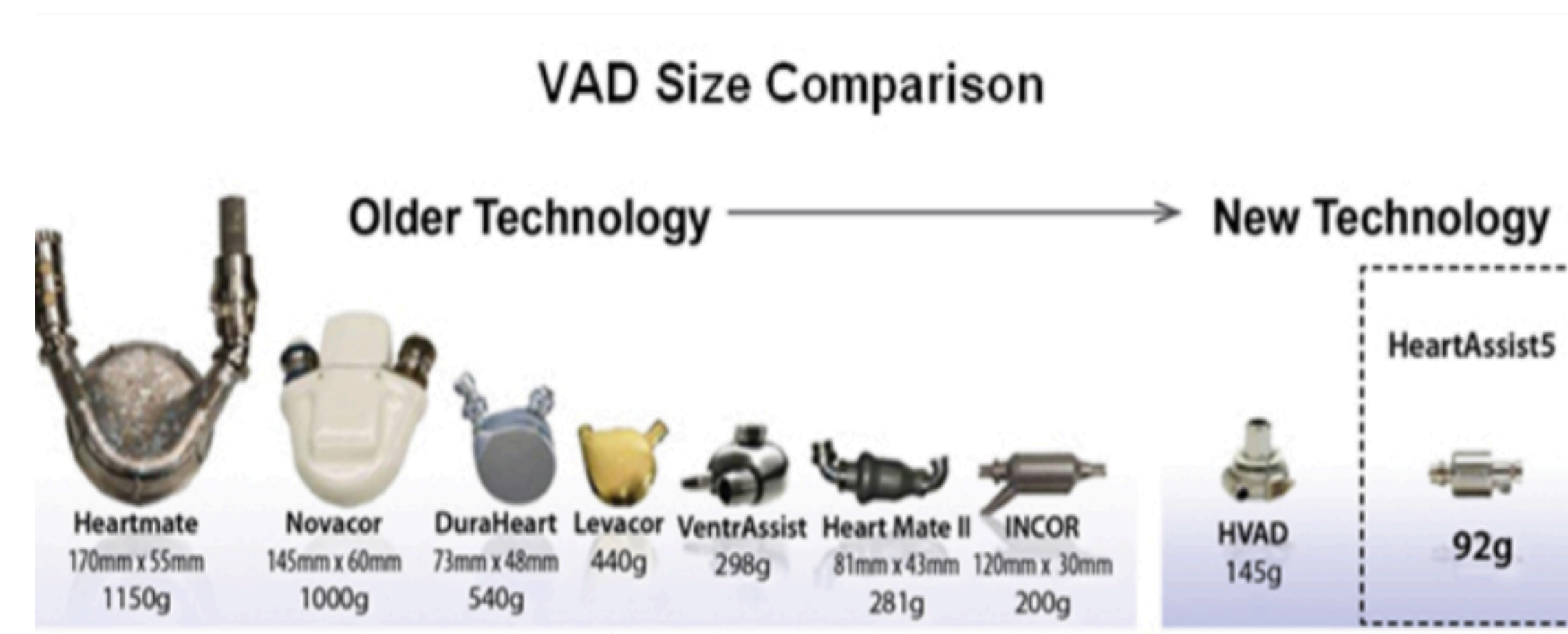


### Introduction

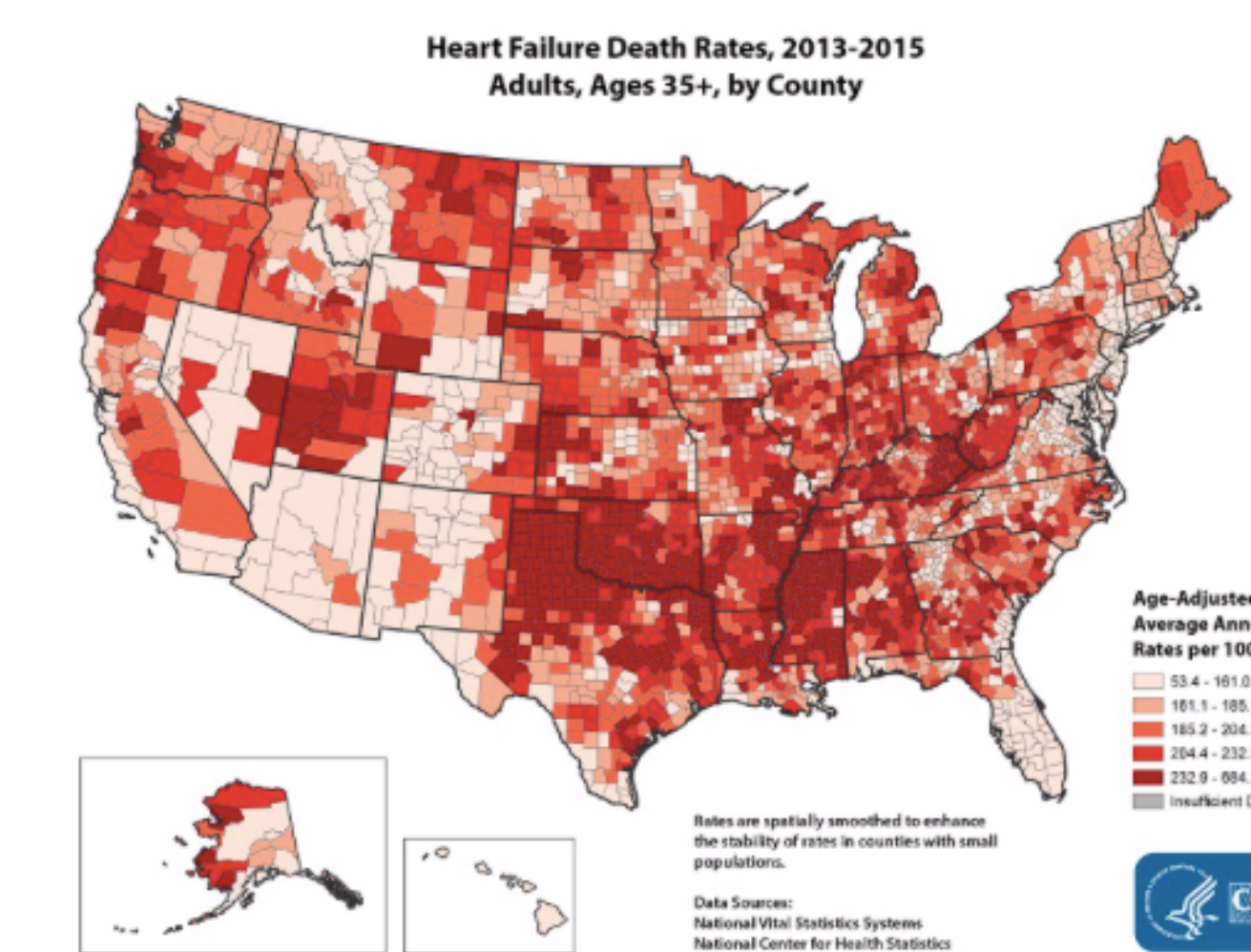
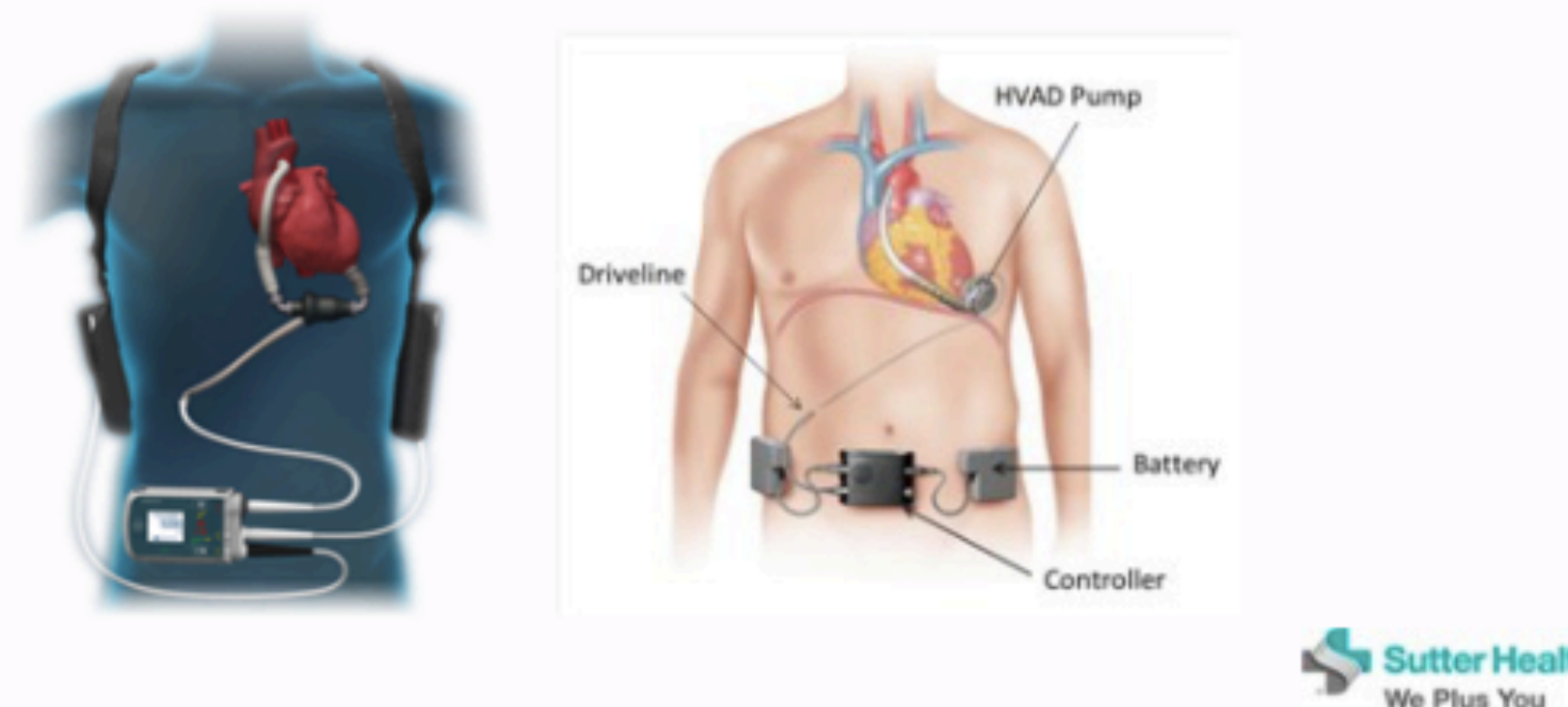
Heart disease among Americans has been on a steady rise since the 1960's. With an increase of Americans smoking having high blood pressure or being obese, the risk or chance of heart disease dramatically was increased. During the 1960's, hospitals didn't have the medical technology they have today. Hospitals started out with various different methods of treating heart failure/disease, however none of the efforts seemed to be the best way to treat the issue. Over the course of several years, quite a few devices have been made to help treat heart failure. Heart disease claim the lives of about 600,000 people every year. This number has been on the rise however with the introduction of new medical devices, the ability to slow down or maintain this Nation wide problem



Older versions of the heart assist devices have been a decently big size. Along with that, the older versions came with a few other issues such as noise, lack of efficiency, and lack of machine durability. The flaws in the devices have created more room to grow and evolve. Currently LVADS, which are Left ventricle assist devices are most commonly used in medical practice to treat heart failure. This device is one of the newest assist devices. This model has increasingly become smaller, while also working harder to assist any other underlying issues that come with heart disease. Previously other LVAD's would start to clot, which is bad especially when the device is supposed to help pump the blood from the heart to every major organ in the body. If the device is preventing that than it should not be in the medical field. Now the LVAD's have pulsatile, which allows the device to mimicking an actual heart making the blood pressure go up and down. This helps prevent the device from clotting. LVAD's are known as the bridge to transplantation. This means that the duty of an LVAD is to maintain the patients current state, artificially pumping blood from the heart to other organs until they are set for a donor. This device helps create a better living future for patients. If patients did not have the LVAD, they would not be strong enough to withstand any type of surgery.

### How does an LVAD work?

- LVADs are implanted through open-heart surgery.
- Unlike a pacemaker or defibrillator, the pump is powered by a controller and batteries that are **outside** of the body.
- The VAD acts like a bypass for the weak ventricle. It continuously sucks blood out from the left ventricle and into the pump, where it is then pushed through the outflow graft that is connected to the ascending aorta.



The importance of treating heart disease is huge. While many new methods are making it easier to help treat this nationwide issue, there is still a need for making sure current methods are able to maintain this issue. To start reducing the rate of people dying from heart disease the first step is making it easier to predict and help see signs of the symptoms. Doctors and medical experts need to do a better job at making people aware of this serious disease. We need to be able to prevent it before it becomes a problem. Having a proper diet, regular exercise, watching your weight, and staying away from smoking are major ways in which people can stay away from heart disease. All of these examples are also major nation wide problems. Being aware of the bad habits is one way to prevent anyone from dealing with heart disease. We invest so much time in creating ways of dealing with heart disease when we have it, instead there should be more awareness of the consequences regarding heart disease.

### Quality of Life

Though the introduction of LVAD's and other heart assist devices have come in to the hospital scene and created a new and better way to treat heart disease, there are still issues that need to be looked into. The question at the center of it all is "What is quality of life?" Patients who had the older version's of the LVAD or was treated by a different method saw decreased quality of life and decreased life expectancy. This caused for some major renovations to the LVAD. This device is supposed to be adding quality to patients lives that may not get to have a long one. The time spent before the transplant is very important as it sets the body up for either success or failure. If the body does not get the required care, such as regular flow of blood to organs and medications like Viagra to help minimize the effects of pulmonary hyper tension than the body will be weak, which reduces the quality of life of the patient. These things if not treated properly can lead to many other issues. Patients are already seeing a decreased life expectancy, to help make sure they see more quality within their shorter life doctors need to make sure they are treating the patients correctly.

### Bibliography:

"Heart Disease Facts & Statistics." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, [www.cdc.gov/heartdisease/facts.htm](http://www.cdc.gov/heartdisease/facts.htm).

"Behaviors That Increase Risk for Heart Disease." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, [www.cdc.gov/heartdisease/behavior.htm](http://www.cdc.gov/heartdisease/behavior.htm).

Picture 1: <https://www.renalfellow.org/2018/01/31/lvad-for-nephrologist-part-1/>

Picture 2: <https://slideplayer.com/slide/6009531/>

Picture 3: [https://www.cdc.gov/dhdsp/data\\_statistics/fact\\_sheets/fs\\_heart\\_failure.htm](https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_failure.htm)