Sustainability of Medical Technology

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Team 6:

- We had to “research and show evidence that life is getting better and that we as a society are creatively solving more problems than we generate. “
- As such we chose to talk about the various technological advances in the field medicine and how they allow us to live better and for longer.
- So, we each chose a specific breakthrough in the field of medicine and technology that we will present.
Introduction

Within the past 100 years, there have been thousands of medical advancements all over the world. Doctors and scientists have been able to find ways to make various diseases, illnesses, and injuries more treatable.

Life expectancy in 1900: 46-49 years of age
Life expectancy in 2012: 78-80 years of age
My Life: Devan Reilly

• I am from Horsham, PA
• The most important things in my life are family and friends
  • I love playing soccer and going to the gym
• Right now I want to be a Chemical Engineer and work in Pharmaceuticals
Diabetes: Now and Then

Then
• Animal insulin was used which consisted of impurities
• Glucose levels were measured by boiling urine
• Tablets that changed color were used to measure Ketones
• Food had to match the insulin
• Diabetics had to get injections about 4 times a day

Now
• Human insulin is used which is cleaner
• Blood is used to measure glucose levels through a prick in the finger or foot
• Dipsticks are used to test for Ketones
• Insulin matches the food
• Diabetics can now use an Insulin Pump which limits the injections they have to get to about once every 2-3 days
My Life

- I’m from DuBois, PA (An hour away from State College)
- I was involved in many sports in High School.
- Most important thing to me is my family.
- I would like to become a Civil Engineer.
- Hope to move back to DuBois after graduation and land a job as well as coaching.
Anesthesia/ Advanced Surgery

Before
- In the mid 1800’s and the early 1900’s anesthesia wasn’t used regularly when operating.
- Only attempted surgery if it meant saving their life.
- Used a sponge or cloth to put ether on and had patients breathe in the fumes with an inhaler.
- Had no way of knowing how much fumes the person inhaled. This can cause extreme side effects some resulting in death.
- Only used in surgery.

After
- Millions of people go into successful surgery with the use of anesthesia.
- Side effects are much less common and less severe.
- Use of surgery and anesthesia can be used for something as minor as getting teeth removed.
- Patients are closely monitored using electronic devices that show vital signs. This improved the safety of patients when they are put under.
- Used in things other than surgery such as giving birth.
Personal info.

- **Name:** Abdulrahman Alowisi
- **Social Life:** I wish to live a long and happy life with my friends and family.
- **Material Life:** I just wish to be able to provide for myself and my family allowing us to live comfortably.
- **Work:** Hopefully I will be a mechanical engineer.
MRI

- MRI stands for Magnetic Resonance Imaging.
- MRI (invented in 1977) is a relatively new technology that utilizes the power of magnets to provide doctors with a non-invasive way to scan the human body.
- Nowadays it is an integral piece of machinery in any hospital as it allows doctors to diagnose and scan for a multitude of diseases and symptoms including but not limited to: M.S (Multiple Sclerosis), brain tumors, torn ligaments, various types of cancer, etc.
MRI
MRI continued:

- Like any other type of technology, there are various types and modifications on MRI’s.
- For example, MRI’s are being built for obese, and claustrophobic people.
- There are also more specialized versions of the MRI such as the fMRI (functional MRI) which is used to map nerve functions in the brain. As well as the MRA (Magnetic Resonance Angiography) which creates images of flowing blood in any artery or vein.
References

http://spectrum.diabetesjournals.org/content/21/2/78.full
http://demog.berkeley.edu/~andrew/1918/figure2.html
http://science.howstuffworks.com/anesthesia.htm
http://science.howstuffworks.com/mri1.htm