Abstract—A short account of the use of Biomedical Engineers within the hospital system. BME’s are necessary to ensure the accuracy and safety of medical devices.

I. ISSUES

Every hospital relies on literally thousands of medical devices each day for monitoring vital signs, performing surgery, and keeping track of patients. None of these tools are perfect, and occasionally break down. Also, accuracy in readings is ‘vital’, and sometimes needs to be recalibrated. Otherwise, a broken surgical device or faulty monitor can cause the death of a patient.

II. SOLUTION

This is where Biomedical engineers come in. All new equipment goes through tests to ensure proper functionality and electrical safety, using tools such as multimeters (pictured below).

Catching problems before they occur is a great way to maintain safety. That’s why each piece of machinery, even televisions, is inspected once a year on a regular basis. The checkups, also called preventative maintenance, or PM’s, may also occur more frequently for the more necessary machines, like MRI scanners. All equipment is catalogued, so that the engineers can see all the history of the machine’s problems.

In the event that something breaks, it’s sent to the Biomed department with specifics regarding the problem. Most tools are easy to fix, but some require the engineer to have certified training from the company. And for more complex devices, or if the warranty allows for it, someone from the company will come to fix it, or have it sent back for repair.

III. HISTORY

Training for this focus actually originated in 1943, when the US Army opened a program in St. Louis. To ensure the wellbeing of wounded soldiers, the medical equipment needed to function at peak capacity, which required someone to be able to fix them.

The use of Biomedical engineers is hospitals exploded in 1970, when an article by Ralph Nader claiming that more than 1,200 people each year were unnecessarily killed or harmed by hospital electrical problems. Biomedical engineers now work in hospitals all over the country, preventing numerous deaths by the work they do.

IV. DISCUSSION

Technology is continually advancing and evolving at enormous speeds. Build quality, functionality, and usability keep making life-saving machines better and better. But nothing is completely, as it is said, ‘idiot-proof’. Power cords can still become frayed, people push the wrong buttons, and gravity can still pull things off shelves to a crash on the floor below. When these happen, and they surely will continue to, Biomedical engineers will always be there to fix them. Those who work within the hospital will have job security as long as there are people who need medical attention.

REFERENCES