The Statues of Clinical Engineering in Yemen

History of Biomedical Engineering (BME) in Yemen:-

Biomedical engineering field is considered as a unique major in Yemen. This major is provided only by two private universities and the student must pay a lot of tuition fees. As a result, only a few engineers graduated from this program and work in hospitals as clinical engineers. All of public universities do not offer this program.

Thus, BME department is offered by two private universities in Yemen which lead to B.Sc degree in biomedical engineering. The first university offered BME was in 2006 to make the first step of clinical engineering in Yemen. This program aims to develop technology concern to healthcare and medical equipment. The curriculum of the program is related to medical devices and electronics. Therefore, the graduate students only can work in health centers and hospitals as clinical engineer to enhance the healthcare services.

Healthcare Service: -

There are two types of healthcare service in Yemen: -

- **Public Hospitals**: - health services are almost funded by the government and international organizations. They receive the medical equipment and all medical stuff from donation.

**Private Hospital**: - patient should pay a high amount of money for services.

Donners are the main funding for the healthcare services in Yemen.

There are a lot of medical equipment are donated from foreign countries or funded from foundations and most of the donated equipment have a problem in operation. A plenty of medical devices are out of services and needed a clinical engineering for maintenance. There are a lot of broken
devices in the storage. Most hospitals do not have clinical Engineer. Hospitals sometimes can call electronic technician to fix the broken medical devices and return them into the services. Some hospitals have a contract with a company to offer a services and maintenance especially for medical image devices. In fact, the government does not offer a budget for clinical engineering career in public hospitals due to a unique filed. Therefore, job opportunities for clinical engineers in Yemen are rare. Most of hospitals do not have contract with companies to repair and calibrate the medical instrument.

**Medical Data**

First, the patient goes to medical recording department. The staff take the information from patient manually. Then, the patient gets a card for diagnostic or treatment. After the patient completes the examination, he brings all his documents to the medical recording to entire all the information in the system. Telemedicine is rare using in Yemeni hospitals. A few private health centers can share the health data between the departments. The hospitals in rural area do not have computers to save the medical data. The data only can be taken manually from patient and saved in hardcopy files.

**Rehabilitation in Yemen: -**

Unfortunately, Yemen still has a civil war until now. This has a negative impact into the healthcare services. A lot of people suffer from various diseases and they do not have enough access to the health services. In addition, disabilities and amputation for body parts become widespread during that war in Yemen. Thus, disabilities people need assistive devices to facilitate them to carry out the activities as normal people. Also, the
amputee people need artificial limbs for the missing body parts as replacement. In Yemen, there is no much rehabilitation centers to produce a prosthesis for amputees. They must travel into other countries to get the assistive device or prosthesis and it is costly. Most of amputee and disabilities people do not have enough money to travel abroad to get the health services. Thus, now I am working for my master thesis to develop 3D printed below knee prosthesis with low cost to be suitable for people in Yemen. The rehabilitation in Yemen needs more stuff and tools as well as qualified people to build the any device for disabilities people.

This is a primary information about clinical engineering in Yemen and I will work with a ministry of health later to make a list for clinical engineers to establish a society.

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