Jordan

Clinical Engineering in Jordan has developed in the last 20 years and the clinical engineering sector became one of the best in the Middle East region and provides support and training for neighboring countries like Iraq, Palestine and Sudan through international organizations such as WHO and JAICA. We have trained clinical engineers and technicians and assisted in the establishment of the HTM sector in their countries.

Mainly, we have three sectors that is responsible for clinical engineering in Jordan; Governmental sector, Military sector and the private sector.

The governmental sector represented by the Directorate of Biomedical Engineering (DBE) which is an alliance between the Ministry of Health and the Royal Scientific Society (RSS) which is a non-profit organization and considered to be the largest research facility in Jordan. The majority of medical devices in Jordan are under the supervision of the DBE. It is responsible for 33 Governmental Hospital and 700 healthcare centers around the country and it has around 250 Clinical engineers and technicians. DBE has fully automated Computerized Maintenance Management System (CMMS) which allows the clinical engineers to fill technical reports, and follow device history, which gives a full details of the device lifecycle (from Birth to Death).

The CE-HTM program in Jordan improved the biomedical devices related issues, such as:
1- After the establishment of the DBE in 2001, all the biomedical devices issues were centralized under one management. This has saved decision-making time regarding purchasing, tendering, maintenance etc..
2- Maintenance costs were significantly reduced and the devices lives were extended.
3- Actual needs of the healthcare facilities became easier to determine.
4- Evaluating the quality of the equipment by following maintenance history which gives feedback for future purchases.
5- Regular visits to the healthcare facilities help to recognize equipment utilization rate.
6- Decreasing the budget of tendering new equipment by transfer non-used equipment in healthcare facilities according the utilization analysis.
7- The HTM program helped creating a common ground between healthcare provider and the clinical engineer by understanding their needs from the medical devices, training and proper handling of the biomedical device.
8- Reducing device down time and increasing the PPM Compliance.
9- HTM program has helped the adaptation of freshly graduates engineers or new employed engineers by decreasing the time of learning and understanding of health technology.
To improve patient outcomes, Clinical Engineers had connected medical devices in the healthcare facilities to the Health Information System (HIS). This system is a national HIS named (HAKEEM) which covers all the governmental health facilities in the addition of the Military health facilities. The patient data such as X-ray Images, lab test results, ECG and medical record can be collected at any place that provides healthcare. This gives the healthcare provider and patient ease of access to all of the information by just entering patient’s unique ID.

Biomedical Engineering was first introduced in Jordan by the Jordan University of Science and Technology in 1998. It has been providing hospitals, healthcare centers, universities and research institutes in Jordan and around the world with highly qualified biomedical engineers that are capable in the fields of Biomedical Instrumentation.

Prior that, there were institutes that gives diploma for biomedical technicians. There are currently five universities in Jordan that gives BSc. Of biomedical engineering, two institutes gives technical diploma, and one new Master degree Program, yet to provide any graduates. However, Clinical Engineering was presented in Jordan long before that, from local engineers graduated from overseas countries. Training and technical education was provided to engineers and technicians from inside and outside the country. The Royal scientific Society provided the practical training since 1990 until now under the alliance with the Ministry of Health.

Major Challenges for CE in Jordan are:

1- **Financial Challenges:** Jordan is currently in high debt. Government is attempting to lower the budget for new biomedical equipment and training.

2- **Migration** of the clinical engineers and technicians to Gulf countries for better living conditions and salaries.

3- **Lack of communication** between the Academia staff in universities and the clinical engineers on the market which reduced to lack of research regarding clinical engineering in Jordan.

We are looking to establish a national center for CE, which can provide training and educational center in Jordan in the Middle East region, by the support of world organization like WHO to increase the recognition of the CE in Jordan and the area.

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