

Technical Visit to Subang Jaya Medical Centre's Healthcare Technologies & Biomedical Engineering Facilities

ELECTRICAL ENGINEERING TECHNICAL DIVISION

reported by



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The Healthcare & Biomedical Engineering Working Group, under the Electrical Engineering Technical Division of The Institution of Engineers, Malaysia, organised a technical visit for 20 members to Subang Jaya Medical Centre (SJMC) on 15 March, 2017.

After registration at 9.00 a.m., the group was treated to healthy breakfast of "parfait" and wrap. Then there was a welcome address by the Administrator of Support Services, Mr. Puvanenthiran Alagamuthu Nadar, followed by a safety briefing by its Safety and Health Officer, Cik Mimi Surianti Othman. Then Ir. Shamila Aiaratnam gave a short presentation on SJMC's beginnings until present day.

RSD Hospitals Sdn. Bhd. – Subang Jaya Medical Centre is the current official name following the joint venture between Ramsay Healthcare Limited and Sime Darby Berhad, which formed the holding organisation, Ramsay Sime Darby Health Care (RSD).

RSD-owned assets in Malaysia are Subang Jaya Medical Centre, Ara Damansara Medical Centre, ParkCity Medical Centre, Mediplex Wellness Centre and RSDH College. Its assets in Indonesia are RS Premier Jatinegara, RS Premier Bintaro and RS Premier Surabaya.



Participants at the Biomedical Engineering Workshop

SJMC is a 393-bedded tertiary hospital which opened 32 years ago. It uses cutting-edge medical technologies and equipment as well as state-of-art facilities, especially in imaging and cancer radiation therapy.

Ir. Shamila gave an overview of the function of the Biomedical Engineering department. Participants then visited the Cancer and Radiosurgery Centre to view four major medical devices – the Brachytherapy System, Dual Source Computed Tomography System (DSCT), Linear Accelerator (LINAC) System and 64 Slice Positron Emission Tomography/Computed Tomography (PET/CT) System. On hand to explain the functions of these devices were Senior Medical Physicist Mr. Jasper Hew Choon Soong and the Manager, Mr. Toh Lian Sing, on the Dual Source Computed Tomography Angiography System (DSCT-Angio), which was done at the Imaging Department.

Brachytherapy treats cancer by placing radioactive sources directly into or next to the area requiring treatment. DSCT has two X-ray tubes. Two corresponding detectors are oriented in the gantry with an angular offset of 90 degrees. Generally, DSCT technology comprises two different operating modes: Two X-ray sources and two detectors



Participants listening intently at Cancer and Radiosurgery Centre



Participants being briefed by the Safety and Health Officer

used at the same time in different scanning modes. The two X-ray source/detector systems rotate simultaneously, capturing image data in half the time required when using conventional technology.

LINAC is the device most commonly used for external beam radiation treatments for patients with cancer. The linear accelerator is used to treat all parts/organs of the body. It delivers high-energy X-rays to a patient's tumour.

PET/CT is a nuclear technique that combines, in a single gantry, a Positron Emission Tomography (PET) scanner and an X-ray Computed Tomography (CT) scanner, to acquire sequential images from both devices in the same session. The images are combined into a single superposed image.

DSC-T-Angio is an advanced, non-invasive diagnostic tool that visualises the myocardium (heart), coronary circulation and aorta. This revolutionary technology dramatically alters the way cardiac and vascular diseases (such as coronary artery disease, dissections and aneurysms of the aorta, and atrial fibrillation) are diagnosed, evaluated and treated.

The participants visited the Transformer, Genset, Main Switch Chiller and Air Handling Unit Rooms where they were briefed on the equipment and systems by Ir. Steven Yeoh Kai Siang. They were also taken to the Facilities Engineering and Biomedical Engineering Department office and workshops. Many of the members raised questions about the equipment and received satisfactory answers.

At the end of the visit, the participants were treated to lunch prepared by SJMC's Food Services Department. The visit had successfully given the participants an insight into medical devices and equipment management. ■