

<b>1. Program title</b>
The project for strengthening operations of image diagnostic using Computed Tomography device and intervention using Angiography device at University of Teaching Hospital in the Republic of Zambia
<b>2. Country name</b>
Republic of Zambia
<b>3. Background</b>
<p>Ministry of Zambia purchased an CT and Angiography device (manufactured by Canon Medical systems ex-Toshiba medical systems) and installed them in University Teaching Hospital (UTH), the largest hospital in the Republic of Zambia, in 2015. UTH began medical services using the device from 2016.</p> <p>However, shortage of understanding and improper usage were found in their manipulation and it turned out that they were not used appropriately. From Zambia side, cooperation through human resource development was required for correct understanding and operation of these devices, techniques for diagnosis and intervention for the patients.</p> <p>In 2017 under the The Program for International Promotion of Japan's Healthcare Technologies and Services, the project for strengthening the implementation of CT imaging through providing a doctor, a nurse and 2 radiographers with basic techniques.</p> <p>in 2018,the continuous support for improvement of CT image diagnosis and for fundamental procedures of cardiac catheter angiography examination and diagnostics as a new item were required by CT and Angiography Unit at Radiology department at UTH and the supports were provided.</p> <p>In 2019, the request for the technical support and trainings on cardiac catheter diagnosis &amp; treatment, CT image diagnosis and equipment management was made by CT and Angiography Unit at Radiology department at UTH.</p>
<b>4. Objective</b>
To conduct cardiac catheter angiography diagnosis and treatment, Image processing, equipment maintenance and patient centered nursing care and management using Angiography device for providing appropriate medical care to patients.
<b>5. Program outline</b>
<p>A Japanese expert from NCGM visits the CT and Angio unit in UTH to explain and conducts necessary preparation and discussion approx for 1 week including travel dates overseas in June 2019.</p> <p>In Japan the necessary trainings are provided for a medical doctor, a radiographer and a nurse from UTH Zambia at NCGM hospital for approx two weeks including travel dates overseas in July 2019.</p> <p>In Zambia,between September and October 2019 for approx 2 weeks including travel dates overseas, Japanese experts from NCGM and Tokushima Red Cross Hospital visit the CT and Angio unit to evaluate their activities and provide them with additional technical training and make recommendations on safe and sustainable medical services.</p>
<b>6. Implementation structure</b>
6-1. Japanese side
<p>In Japan under the cooperation of Terumo co,Ltd and Canon Medical Systems Co.Ltd, the trainings for a medical doctor, a radiographer and a nurse from UTH Zambia is provided by the departments of clinical radiology, nursing of NCGM Hospital and Tokushima Red Cross Hospital .</p> <p>In Zambia, Project evaluation,additional trainings and recommendations at UTH are provided by the departments of clinical radiology, nursing of NCGM Hospital and Tokushima Red Cross Hospital ..Bureau of International Health Cooperation(BIHC) of NCGM presides over this project and it is the main window to carry out liaison and coordination.</p>
6-2. Counterpart country
Zambia :Angiography section and the CT section of Radiology department at UTH.

7. Indicator	
7-1. Output	<p>At NCGM and UTH</p> <p>1) Radiographer :to have trainings for necessary topics(Cardiac catheter angiography examination diagnosis and equipment operation at the time of treatment, QA, QC, exposure control,Maintenance of equipment - especially preventive maintenance · understanding · acquisition and acquisition of acquired skills locally).</p> <p>2) Nurse: to have trainings for necessary topics (team medical service in angiography room, the role of lead nurse and infection control and medical safety measures in angiography room)</p> <p>3) Medical Doctor: to have trainings for necessary topics (basic techniques such as embolization, stenting, coiling, Responding to unexpected situations and necessary counter measures etc)</p>
7-2. Outcome	<p>1) After the Training in Japan and UTH, Zambian medical team can provide more than two treatments by themselves</p> <p>2) Patient satisfaction improves and patients anxiety decreases ⇒ Patients' anxiety complaints decrease.</p> <p>3) To be able to manage the equipment more appropriately, and on a daily basis, it is possible to properly check equipment and to deal with a mild failure of the equipment before the use of the equipment starts. ⇒ To be able to do what you could not do.</p> <p>4) To be able to play team medical care as a peripheral treatment and preparation for a doctor to perform necessary procedure in an angiography room and a doctor's assistance (by the lead nurse). ⇒ To be able to do what you could not do.</p> <p>5) To be able to make information sharing and have meeting for intention matching before the operation in the angiography room daily - time out. ⇒ To be able to do what you could not do.</p> <p>6) To be able to start the operation within 20 minutes after patient entering the angiography room. ⇒ To be able to do what you could not do.</p> <p>7) Either Japanese-made medical equipment or expendable items are purchased.</p> <p>8) To be able to make a proper system on proper maintenance for medical equipment/devices and purchasing necessary consumables for medical services which are using CT and angiography with catheter.</p>
7-3. Impact	<p>1) This diagnostic treatment becomes a routine work at the angiography / Ugi room of UTH.</p> <p>2) The base of sustainable service in this field is made.</p> <p>3) If CT or angiography equipment is introduced in other government hospitals in the future in Zambia, the medical technology, treatment &amp; care to the patients educated by Japanese experts in this medical service will be expanded through the Zambian medical team in UTH</p> <p>4) Essential preventive maintenance of equipment is carried out and the frequency of breakdown or serious failure is reduced.</p> <p>5) Required image shooting and processing become available and then early detection and treatment of disease become possible. Image support to the surgical field is expanded, the examination time and the operation time are greatly shortened, the productivity is improved, the mental and physical burden of the patient is decreased and the medical standard level of the whole country of Zambia is improved.</p> <p>6) By being able to do this medical treatment, a treatment index can be created as a new health indicator.</p>
8. Main activities	
8-1. Training in 2019	
1)	A Japanese expert from NCGM visits CT and Angio unit at the department of Radiology in UTH Zambia for conducting necessary explanation, preparation and discussion about for 1 week in June 2019.
2)	3 Zambian trainees (a medical doctor, a radiographer and a nurse) visit NCGM and have necessary trainings for CT and Angiography about for 2 weeks between in July 2019.
3)	4 Japanese experts from NCGM and Tokushima Red Cross Hospital visit CT and Angiography unit at the department of Radiology in UTH Zambia for conducting evaluation, necessary additional trainings especially for the medical doctor for Angiography treatment and discussion about for 2 weeks between September and October 2019.