

Transition from Co-60 to LINAC

Experience in Sri Lanka

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Current Category 1 & 2 in medical sector

Radiotherapy with Co-60 sources - category 1

- National Cancer Hospital / Maharagama - 04
- Cancer Unit / Karapitiya - 01
- Cancer Unit / Kandy - 02
- Cancer Unit / Badulla - 01
- Cancer Unit / Anuradhapura - 01
- Cancer Unit / Jaffna - 01

TOTAL = 10

All Machines installed in 1980 - 1990

Current category 1 & 2 in medical sector

Brachytherapy with Co-60 sources – category 2

- National Cancer Institute / Maharagama - 01
- Cancer unit / Kandy - 01

Installed in 2014

Management of Co-60 Sources

- Local agent is Ariston's PVT(Ltd)
- Return of the used Co-60 sources is the responsibility of local agent.
- When purchasing a new source we get the quotation including return price also.
- Immediately after installing the new source (maximum 2 weeks), the used source is returned to the supplier.

Transition Co-60 to LINAC

- Ministry of Health took the decision to replace all Co-60 Machines by Linacs in 2010

Reasons

- Age of the Co-60 Machines
- High price of Sources
- Inaccuracy of the treatments
- Don't have advance features (IMRT, SRS, SRT, SBRT)

New Project

- SUPPLY OF EQUIPMENT OF HIGH ENERGY RADIOTHERAPY WITH HIGH ENERGY RADIATION FOR CANCER PATIENTS IN SRI LANKA
 - New project is submitted to the ministry by Sri Lanka College of Oncology .
 - Evaluation is done by an appointed committee.

New project

- Selection of LINAC models is done by Ministry appointed committee.

Ministry of Health representative 01

Ministry of Finance representative 01

Consultant Oncologists 02

Medical Physicist 01

Biomedical Engineer 01

New Project

- Phase 01

Electra Synergy (Dual energy)

- National Cancer Institute - 4 Linacs
- Cancer Unit / Kandy - 2 Linacs
- Cancer Unit / Karapitiya - 1 Linac
- Cancer Unit / Baticloea - 1 Linac
- Cancer Unit / Jaffna - 1 Linac

New Project

- Phase 02

Electra Compact (Single energy)

- Cancer Unit / Anuradhapura - 1 Linac
- Cancer Unit / Rathnapura - 1 Linac
- Cancer Unit / Kurunegala - 1 Linac
- Cancer Unit / Hambantota - 1 Linac

Current Status

- In 2014, one Linac was delivered to NCIM and commissioned.
- In 2015 Karapitiya, Baticloea, Jaffna received 3 dual energy Linacs.
- The Linacs are still in the boxes due to internal issues.
- Other proposed centres did not receive the Linacs.
- In 2016, the Project was put on hold.

Current Status

- In 2017 a new committee was appointed to restart the project. But Ministry of Health did not give any instruction to restart.
- Co-60 units are still in use because of unavailability of Linacs.
- In 2018, Ministry agreed to replace 4 Co-60 sources.

NCIM



Baticolea Unit



Karapitiya Unit





Jaffna Unit



Linac Experience in NCIM / Maharagama

- To commission the first Linac took 6 months due to lack of previous experience with this type of equipment.
- Start with few number of patients and with 3DCRT.
- Increased number of patients up 80 and technology IMRT, SBRT, IGRT.
- Now technologists, physicists and oncologists have good knowledge in Linac treatments.

Challenges With LINAC

- Maintenance of the machines
 - Cost is very High (Rs 40 Million per machine per year)
 - Down time of Linac.
 - Number of patients
 - Supportive equipment (UPS, Chillers, Generators ,CT Sim).
 - QA

Thank you