EFFECTIVE AND SUSTAINABLE RADIOTHERAPY IN AFRICA

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OBJECTIVES

Provide

Provide an overview of radiotherapy in Africa

Share

Share ideas on how to improve the situation

Discuss

Discuss the safety issues of a sustainable radiotherapy

Share

Share some of the activities to provide access to sustainable radiotherapy from the IAEA
RADIATION PROTECTION OF PATIENTS UNIT

MISSION:

To promote safety by generating, collecting and publishing information about the radiation protection of professional staff and patients in medical procedures involving ionizing radiation.

https://rpop.iaea.org
• Cancer afflicted approximately 14,000,000 persons worldwide in 2012.
• This number will only increase as populations in the developed and developing countries continue to live longer.
• The three most widely used treatment modalities for this lethal disease are surgery, chemotherapy (systemic therapy) and radiotherapy.
• It is estimated that approximately  50% of cancer patients would benefit from radiotherapy at some stage in the course of their therapy. (World Health Organization)
• 5.1 million radiotherapy treatment courses annually (UNSCEAR 2008 Report)
For radiotherapy to be maximally effective it must generally be delivered very close to a patient’s tolerance, maximizing the probability of cure/palliation whilst minimizing unacceptable side effects.

Small deviations from optimum, evidence based prescription and delivery can compromise the clinical outcome for the patient either through unnecessarily reduced life expectancy and/or unnecessary morbidity.
Radiotherapy is complex and continues to increase in its complexity
• It is essential to remain focussed on protecting the patients, e.g.:
  • Reports of accidents in radiotherapy, leading to injuries and death
  • Sometimes errors repeated in more clinics
ISSUES IN AFRICA ARE MORE COMPLEX
WE HAVE AN ACCESS AND A SUSTAINABILITY ISSUE TO ASSURE SAFE TREATMENT FOR CANCER
BUILDING BLOCKS FOR SUSTAINABLE RADIOTHERAPY

- Infrastructure
- Equipment
- Human Resources
- Financial Resources
- Long term planning
- Regulatory Oversight
INFRASTRUCTURE

Access to power
Access to clean water
Access to stable building site
Access to materials to build a shielded room
Access to engineers and contractors to build the site to specifications

Resources

EQUIPMENT

Tailored to the demographics of the country and types of cancers within the population

Consider the number of cases within the population

Equipment also includes diagnosis, simulation, treatment planning and quality assurance

Reliability of the equipment

Cost to maintain

State of the art is not always the place to start

https://www.iaea.org/services/review-missions/impact-reviews#:~:text=The%20IAEA%20applies%20a%20unique,cancer%20control%20in%20their%20country.
HUMAN RESOURCES

Diagnostic capability
Pathology Capability
Radiotherapy Capability
  Radiation Oncologists
  Medical Physicist
  Radiation Therapists
  Oncology Nursing
  Service Engineers

Staffing in Radiotherapy: An Activity Based Approach

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FINANCIAL RESOURCES

Salaries
Operational Costs
Consumables
Service Contracts
Spare Parts
Replace costs

Infinite life of equipment in radiotherapy

Long term planning

Non sustainable plans lead to loss of life and lack of confidence in government to provide adequate health care

Expansion needs to be planned

- Financial resources
- Training Staff
- Improving Infrastructure
REGULATORY OVERSIGHT

Essential if we are to have safe access to radiotherapy

It is what assures that patient are treated safely

This is underappreciated in Africa and is a significant impediment for improving access and sustainability of radiotherapy
ROAD MAP FOR SUCCESS

Clear path to improving access and sustainability at the national level

Core implementation team

Transparency

Removal of the bias by manufacturers of equipment (ethics)

Utilization of project management

Understanding constraints
Between 30% and 50% of cancer deaths could be prevented by modifying or avoiding key risk factors and implementing existing evidence-based prevention strategies. The cancer burden can also be reduced through early detection of cancer and management of patients who develop cancer. Prevention also offers the most cost-effective long-term strategy for the control of cancer.

**Management**

Cancer is more likely to respond to effective treatment when identified early, resulting in a greater probability of surviving as well as less morbidity and less expensive treatment.

There are two distinct strategies that promote early detection:

**Early diagnosis** identifies symptomatic cancer cases at the earliest possible stage.

**Screening** aims to identify individuals with abnormalities suggestive of a specific cancer or pre-cancer who have not developed any symptoms and refer them promptly for diagnosis and treatment.

Treatment options include surgery, cancer medicines and/or radiotherapy, administered alone or in combination. A multidisciplinary team of cancer professionals recommends the best possible treatment plan based on tumour type, cancer stage, clinical and other factors. The choice of treatment should be informed by patients’ preferences and consider the capacity of the health system.
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Radiating Hope

Bill Gate’s Foundation

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THANK YOU

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