



# Impact of innovation and research on resource optimization

Member State examples contributing to CRPs

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# Cancer burden

- Over 19 million people around the world were diagnosed with cancer and almost 10 million died from cancer in 2020, 70% were in low-and-middle-income countries
- Over the next 2 decades, the number of new cancer cases is expected to rise approximately 50% worldwide.

# Cancer burden

- The growing burden of cancer is a major public health threat which no healthcare system seems sufficiently prepared to tackle alone, particularly in LMICs.
- In these regions, access to quality affordable care, including cancer screening facilities, trained medical professionals, availability of conventional treatment (surgery, chemotherapy, and radiation therapy), and supportive care services, can be extremely limited

## Research and innovation in global cancer control

- Research and innovation in healthcare technologies, strategies and services offer the potential to save, improve and extend the lives of millions of people diagnosed with cancer each year.
- Innovation remains to be academic until applied in clinical research trial. independent international research helps to fill gaps that can benefit patients.
- Innovation is meaningless if not available to everyone who needs it in a timely and affordable manner. This is a challenge facing all stakeholders in cancer care.

# Innovation and resources optimisation

- Reduction of inefficiencies
- Efficiency is concerned with the relation between resource inputs (costs, in the form of labour, capital, or equipment) and... final health outcomes (lives saved, life-years gained and quality-adjusted life-years)
- Research priorities are mainly driven by the interests of drug companies which favour drug trials.
- It is a great challenge to do international research on radiotherapy applications and innovations
- This needs support from international organisations

# Coordinated Research Projects CRPs

- The IAEA through Coordinated Research Projects encourages and assists research on the development and practical use of atomic energy and its applications for diagnosis and treatment of cancer
- It brings together research institutions from developing and developed member states to collaborate on research projects that improve treatment outcomes especially in Member States of limited resources

## CRP: Stereotactic body radiation therapy in hepatocellular carcinoma (SBRT)

- Liver cancer is a common cancer in developing countries
- The role of radiation therapy was very limited with old technology
- SBRT is an emerging innovation option for unresectable HCC allows for:
  - high dose to the tumor and lower dose to surrounding normal tissues
  - Treatment in fewer number of fractions (1-5)



## SBRT in HCC (CRP)

- This was randomized trial comparing classic TACE (Trans Arterial Chemo Embolisation) treatment with the new modality of SBRT
- The rationale was SBRT is not inferior to TACE and may be better
- To be accepted in this trial there was quality control assessment procedures to be sure that we fulfill the assigned precise criteria.
- Each patient must be subjected to QA procedure and sent to independent QA management (TROG-Australia)



# What had we gained from this CRP ?

- Unfortunately, the trial faced a great problem for patients' accrual in the specified period because of COVID.
- The trial stopped this year for evaluation.
- Apart from that we gained:
  - International scientific cooperation
  - Innovative technique that was applied for the first time in Egypt
  - Education of working staff about treatment technique background and required procedures
  - SBRT is now widely used in Egypt in high tech centers

**THANK YOU FOR YOUR ATTENTION**