

## RCARO MANAGED PROJECT RCA RESEARCH PROJECT THEME

<b>Title</b>	Closing The Gap in Radiotherapy Access in RCA Government Parties (RCA GPs)
<b>Proposed by</b>	Tiara Bunga Mayang Permata, MD, PhD/ Soehartati Gondhowiardjo, MD, PhD
<b>Proposed Duration</b>	Three years
<b>Overall objective</b>	To measure the gap in radiotherapy services, specifically in the region and to estimate the potential economic and life loss upon failure to close the gap.
<b>Project Description/Abstract</b> (max 300 words)	<p>The global cancer burden is rising rapidly and expected to increase until 2040 and the shortage of radiotherapy services in Asia-Pacific region has been commonly known. This is worrying as the exponential rates of population growth and cancer incidence often outpace the linear growth rate of radiation therapy services.</p> <p>This research study aims to measure the gap in radiotherapy services in the region and to estimate the potential economic and life loss upon failure to close the gap, with three steps:</p> <ol style="list-style-type: none"> <li>1. Calculating burden of cancer requiring radiation therapy <i>incl. current and prediction of cancer incidence, radiotherapy utilization rate (RTU), current number of radiotherapy machines and center, levelling or referral system for radiotherapy, human resources availability, training centers and system, working system available, etc</i></li> <li>2. Estimating core investment required for radiotherapy <i>incl. estimation of future facility, equipment, and human resources needs, estimation of radiotherapy cost: capital and construction costs, personnel costs, educational costs; capital and operational expenses, etc</i></li> <li>3. Assessing the outcome <i>incl. return on investments in terms of life-years and financial values, potential loss upon failure to close the gap, roadmap planning, etc</i></li> </ol> <p>The result will provide an evidence-based information for policy maker and stakeholders involved in national cancer control planning to support the scaling up radiotherapy services in the region.</p>
<b>Participating Government Parties</b>	RCA GPs
<b>Problem to be addressed</b> (Area(s) of Compliance with RCA MTS & SP 2018-2023)	<p>There is a shortage of radiotherapy access in Asia region (Zubizarreta et al., 2015; Zubizarreta et al., 2017; Gondhowiardjo et al., 2019; Yahya and Rosland 2017). A study by Romero et al (2019) has also showed that the radiotherapy has not been a priority in national cancer planning.</p> <p>Align with the above publications, the RCA MTS for 2018-2023 mission aims to promote the nuclear technologies benefit to end users and policy makers. Therefore, this project would appropriately address the gap and try to provide evidence-based information to support the national cancer control planning and in scaling up radiotherapy access.</p>
<b>Why should it be a regional project?</b>	Asia has the highest burden of cancer in the world and more than 50% of global cancer deaths occur in this region (Sung et al., 2021) and the trend is

	<p>expected to rise. With the shortage of radiotherapy access seen in many RCA member countries; therefore, assessing the gap is expected to bring more beneficial across the region.</p>
<b>Stakeholders</b>	<p>The results of this study are expected to lead to the scaling up of radiotherapy services therefore the direct beneficiaries would include the cancer patients in RCA GPs. Other beneficiaries include all clinician staff (radiation oncologists and other multidisciplinary clinicians), and research staff.</p> <p>End users are all policy makers and stakeholder involved in national cancer control planning. They are expected to be able to use the result as an evidence-based information to support the policy making in the countries and disseminate the information.</p> <p>Relevant researchers of RCA GPs would be responsible to form the research staff to help with the project (gathering information and assessment)</p>
<b>Role of Nuclear technique(s) to be used</b>	<p>Radiotherapy has been identified as an essential treatment for cancer patients. As about 50% of cancer patients may require radiotherapy during the course of their treatment, either a curative or palliative treatment.</p>
<b>Physical Infrastructure and Human Resources</b>	<p>Radiation oncologists, research staff from each RCA GPs to provide inputs/information.</p> <p>National societies from each RCA GPs will play major part in the implementation of the project</p> <p>The IAEA would be expected to give expertise in calculating cost and needs related to radiotherapy or can be collaborators in this study if deemed necessary.</p>
<b>Potential for development into an RCA technical cooperation project</b>	<p>This research project will help identifying the true cancer, radiotherapy utilization rate, pattern of disease and patients, cost-related to radiotherapy implementation. All these information can be further used for advocacy and future bigger project. The result of the research can be expected to contribute to increasing RT access in RCA GPs.</p>
<b>Potential for improving the utilisation of established national research organisations / institutes, increasing regional research networks and resources and adding value to future inputs to that particular area of research</b>	<p>To date, there is no research focusing the assessment of gap in RCA GPs. The results will not only provide evidence-based information to support the policy development and cancer control in the region, but also encourage the national research organisations to address the needs of radiotherapy services in the country. The research will help to expand the research skills to researchers in the region.</p>