IAEA Radiotherapy Projects World Wide
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Location	Title	Short description
Algeria	Improvement of Radiation Physics Capability in Radiotherapy	The IAEA will provide expert services and upgrade equipment at the center in Blida. More personnel will be trained in medical physics and in the use of equipment and its application. As a result of this project the quality and precision of cancer treatment will be improved.
Albania	Prevention and Improved Treatment of Skin Cancer	By the end of the project, a study of the skin cancer situation in the country should be completed, a cancer management strategy ready, and the basic infrastructure for the treatment of skin cancer in place to treat patients.
Angola	Establishment of a National Radiotherapy Centre	A radiation oncology department with the capacity to treat approximately 1,000 cancer patients per year will be established at the National Oncology Centre. The availability of cancer treatment services in the country will contribute towards better healthcare services and save lives.
Argentina	Optimization of Radiation Treatment of Cervical Cancer	Additional diagnostic capabilities and improved cancer patient care will be realized through improved human resources in the region and an improved supply of required equipment to complement the services already provided. Patients undergoing radiotherapy will receive better quality treatment.
Armenia	Upgrading Efficiency of External Beam Therapy and Brachytherapy for Oncological Patients, Phase II	Modern brachytherapy treatments will be provided to the patients. Improved tumour imaging will lead to better prognosis for patients. The OSC will reach Centre of Competence standards.
Azerbaijan	Upgrading Radiation Oncology in the National Oncology Centre	Technology for modern radiotherapy will be transferred; quality assurance/quality control and safety in teletherapy administration will be improved; capacity to treat cancer by teletherapy will be increased; new teletherapy and brachytherapy machines, dosimetry, treatment planning system, simulator, mould room will be delivered and used appropriately.
Africa (regional)	Improvement of Clinical Radiotherapy (AFRA II-1)	The project aims at assisting AFRA Member States with improving the standard of radiotherapy and introducing new clinical techniques in teletherapy and brachytherapy. This will lead to a substantial reduction in errors in treatment planning and delivery, resulting in improved outcomes for cancer patients. It will contribute to the early detection of cancer.
Africa (regional)	Management of the Most Common Cancers in Africa (AFRA II-4)	The aim of the project is to improve the comprehensive multidisciplinary treatment of patients suffering from

(regional)	Cancers in Africa (AFRA II-4)	major cancers. In the short term, the project will improve treatment of the six most common cancers, increase the awareness of decision makers, and reduce the cost of treatment. In the long term, the participating countries will become self-sufficient in addressing the ever-increasing incidence of these cancers, and will acquire high standards and skills in teletherapy and brachytherapy.
South Africa	Development of a Patient Positioning System for High-Precision Radiotherapy	The project aims at upgrading the existing patient positioning system for proton radiotherapy at the National Accelerator Centre (NAC). Costs will be reduced because they will not have to travel abroad and more patients will have access to proton treatment.
Asia & the Pacific (regional)	LDR and HDR Brachytherapy in Treating Cervical Cancer (RCA)	The aim of the project is to contribute to the improved management of patients with cervical cancer, increasing the number of patients receiving radiotherapy, and improving survival rates.
Asia & Pacific (regional)	Distance Education in Radiation Oncology (RCA)	Sixty-three modules on radiation oncology will be made available on CD-ROM, capable of being placed on the Internet. The availability of the distance-learning materials will fill a long-recognized education gap among radiotherapists and radiographers, enhancing improvements in the management of cancer patients of the region. The potential for enrolling more students with Internet access will increase, thereby reducing the cost of training. The use of a common syllabus for training will also lead towards harmonization of training of radiation oncologists.
Bosnia Hercegovina	Establishment of a Centre of Radiotherapy at Banja Luka	A fully functional radiotherapy centre at Clinical Centre in Banja Luka will be established. Cancer patients in the Banja Luka region will be able to receive treatment locally and not travel abroad.
Bolivia	Upgrading Radiotherapy Services	The increased capacity of the service at the Instituto Oncologico del Oriente Boliviano in Santa Cruz, Hospital Obrero and Complejo Hospitalario Viedma in Cochabamba will provide adequate treatment to cancer patients, who are either currently not or only partially treated due to the present limitations of the radiotherapy centres. Cancer will be diagnosed earlier and more patients will be effectively treated.
Colombia	Enhancing Teletherapy Services at the National Oncological Institute	The project will bring about significant reduction in side-effects suffered by cancer patients. Teletherapy equipment with multi-leaf collimator will be fully operational at the end of the project. This project will lead to savings in the healthcare sector by reducing the number of patients requiring treatment for side effects of radiotherapy treatment.

Croatia	Improved Use of Imaging and Radiotherapy Technology	The existing equipment in three medical centres in Zagreb (University Hospital "Sestre Milosrdnice" (UHSM), University Hospital for Tumours (UHT), and the Clinical Hospital Centre Rebro) will be used more effectively, and the centers would reach the level of Centres of Competence.
Croatia	Establishing the Centre for Stereotactic Radiotherapy in University Hospital for Tumours	It will be possible to treat cancer patients with small brain tumours in Croatia instead of using more expensive services abroad.
Ecuador	Reactivation of a Radiotherapy Service	This project will contribute directly to improving cancer therapy in the southern region of Ecuador. It is expected that more than 300 patients will receive acceptable radiation therapy per year. This project will contribute to saving lives, by providing radiation treatment to cancer patients, with low-income.
El Salvador	Substitution of Radium-226 Sources by Cesium-137 in Cancer Therapy	By reducing the treatment time and hospitalization time, cost will be reduced, and a larger number of patients will be treated than at present. Furthermore, life expectancy will increase because the interval between diagnosis and treatment will decrease. The project is expected to improve cancer treatment, by making brachytherapy more accessible to patients and reducing occupational radiation exposure to medical workers.
El Salvador	Strengthening of Integrated Care for Women with Invasive Cancer of the Uterine Cervix	Upgraded radiotherapy services will lead to safe and effective cancer treatment of patients who are currently turned away or partially treated due to the current limitations. This will lead to reduced treatment costs, inter-institutional co-operation, and improvement in the quality of life of women in particular.
Ethiopia	Upgrading the Radiotherapy Centre	The Agency is providing long-term training to supplement key personnel. An orthovoltage unit is being provided. The envisaged improvements in the quality and quantity of the service provided will lead to reduced waiting times, better treatment, and more patients benefiting from the facility. This is particularly relevant for cervical and breast cancer patients.
Europe (regional)	Quality Assurance/Quality Control in Radiation Oncology	Through IAEA-provided training and international expert services, participating radiotherapy facilities will have the opportunity to improve the accuracy of treatment. At least ten Centres of Competence will be established in the region; which will also have an economic impact, as several hundred patients per recipient centre will be treated safely and cost-effectively each year at internationally accepted standards. Each recipient centre (Centre of Competence) will serve as a national model for improving radiotherapy in other institutions.

Gabon	Rehabilitation and Extension of Radiotherapy Service (Phase II)	The Agency will provide brachytherapy equipment and assist the Radiotherapy Department to improve quality in radiation therapy. With improved equipment and training, teletherapy administration will improve and an increased number of patients will receive treatments in Gabon. Adequate local facilities will also significantly reduce the burden on the public health budget resulting from people being sent abroad for treatment.
Ghana	National Radiotherapy and Nuclear Medicine Network	This project has the aim to establish a national network of brachytherapy, teletherapy and nuclear medicine services in Ghana, based on major centres in hospitals in Accra, Kumasi and Tamale.
Ghana	Improvement of Radiotherapy Service at Korle-Bu, Accra	Through the provision of an Orthovoltage machine, ionization chamber, and items for the mould room, the IAEA will enable adequate treatment of keloids, residual head and neck tumours, chest wall tumours, and the like with the eventual aim of reducing the rates of recurrence, improving survival, and better palliation.
Guatemala	Strengthening the Quality Assurance Programme at the National Radiotherapy Reference Centre	The current project will assist to increase the number of cancer patients treated and will decrease the rate of post-radiotherapy complications, thus improving the quality of life of patients. A QA programme for the radiotherapy service of INCAN will contribute to effective cancer treatment.
Guatemala	Strengthening the Quality Assurance Programme at the National Radiotherapy Reference Centre	Providing Simulator equipment with fluoroscopy and 3D planning, expert services and training of local staff, will increase the number of cancer patients treated and will decrease the rate of post-radiotherapy complications, thus improving the quality of life of patients. A QA programme for the radiotherapy service of the National Cancer Center (INCAN) will contribute to improved cancer treatment.
Iran	Improvement of Clinical Brachytherapy for Cancer Management	Reliable gynaecological and interstitial brachytherapy available in major centres in three main cities in the country will lead to improved cure rates and reduced morbidity in the management of cancer. The availability of locally produced radioisotopes will lead to savings for import of materials or treatment abroad.
Israel	Quality Assurance in the Use of Advance Techniques for Radiotherapy	The implementation of the project will result in the adoption and regular use of a Quality Assurance programme for the advanced techniques of treatments to be provided with the new accelerator facility. A substantial improvement will be achieved in both quality and quantity in the treatment of cancer patients at the Department of Oncology at the Rambam Medical Centre.

Indonesia	Initiation of Radiotherapy Centre on Borneo Island	The project will assist in the initiation and operation of the radiotherapy centre on Borneo Island; to enhance the national capacity for provision of radiotherapy services to cancer patients. Cancer patients in Borneo will benefit from the services provided by the centre.
Jordan	Upgrading Radiation Therapy and Diagnostic Radiology Centre	The capability of the Al-Amal Cancer Centre are being enhanced for making optimal use of its large investment in equipment and human resources. The quality of the treatment offered at the Centre will meet international medical and radiation safety standards. The Centre has the potential to become the region's leading, fully operational radiation oncology centre, and its facilities could be offered for training professionals from other similar centres in the region. Patient care and services will improve.
Kenya	Early Diagnosis and Treatment of Cervical Cancer	The project will contribute to an improvement in the well-being of families affected by cervical cancer by decreasing morbidity and mortality and reducing health care costs. Good planning of screening and treatment facilities will permit the effective use of scarce national resources. The cure rate is anticipated to increase substantially from the current low levels.
Latin America (regional)	Improved Quality Assurance in Clinical Dosimetry for Radiation Therapy (ARCAL XXX)	The majority of the medical physicists in the participating Latin American Member States will be trained in techniques in clinical dosimetry, using various detection methods. Equipment for in vivo dosimetry and portal imaging will be provided for operational radiotherapy units. The use of computerized treatment planning systems for patient treatment in the participant hospitals will be optimized, resulting in an improvement in treatment delivery in participating hospitals.
Latin America (regional)	Improved Quality Assurance in Radiation Therapy (ARCAL LVIII)	As a result of the project, at least one trained clinician and medical physicist will be working in each co-ordinating center in each participating Member State. Quality control (QC) of radiotherapy units will take place on all equipment. At least two auditing visits by IAEA experts per year will determine and maintain the quality of the programme. Patients treated in these centres will benefit from improved therapy.
Latin America (regional)	Improvement of the Radiation Treatment of Uterine Cervix Cancer (ARCAL LXXIV)	Through assessment of the current status of radiation treatment for cervical cancer in the participating Member States, strategies are identified for the national health sectors to improve the control of cervical cancer through early detection and advanced treatment technologies. Training needs are assessed, and distance-learning materials in Spanish provided to counterparts. A higher level of survival of cervical cancer patients through improved use of available

		resources, enhanced QA/QC in treatment, and increased competence of clinical management will be reached.
Lithuania	Upgrading of Radiotherapy in Oncology	Newer technology for the use of linear accelerator for radiotherapy will be transferred. The capacity and reliability of the Lithuanian Oncology Centre's radiotherapy services will increase. The Centre will be able to administer up-to-date cancer treatment with modern equipment. Cancer patients will receive radiotherapy treatment safely and economically at an internationally accepted level.
Libya	Sustainability of Healthcare Services in Nuclear Medicine and Radiation Therapy	The primary aim of this project is to provide the staff of the Tripoli Medical Centre with adequate training in nuclear medicine and radiation oncology. The quality of patient care will improve and the need for patients to go abroad for specialized tests and treatment will be reduced, thereby resulting in economic benefits.
Madagascar	Strengthening Radiotherapy and Nuclear Medicine	The aim of this project is to upgrade the capability of the Ravoahangy Andrianavalona Hospital to provide cancer treatment. Cancer diagnosis and treatment will improve, and radiation treatment services will become more accessible to more people. Patients will not have to travel abroad for diagnosis and treatment.
Mongolia	Improvement of Radiotherapy Services: Development of Quality Assurance Programme	The improvement of radiotherapy services in Mongolia through developing and implementing a comprehensive quality assurance (QA) programme for radiotherapy. The successful implementation of the project will increase the capacity and quality of the radiotherapy treatment in Mongolia.
Myanmar	Improvement of Radiation Therapy	The aim of this project is to improve the quality of radiation therapy in three general hospitals in Yangon, Mandalay, and Taungyii, resulting in improved treatment for patients and reduced occupational radiation exposure of medical workers.
Macedonia	Upgrading Orthovoltage Radiotherapy	The new x-ray machine at the Institute for Radiotherapy will be available for curative skin cancer radiation treatment, for palliative cancer treatment of breast, head and neck, as well as metastatic cancers, which will reduce the overload on the existing facilities for cancer treatment in the country. Fewer patients will require treatment abroad.
Macedonia	Establishing High Dose Rate Brachytherapy	Cancer patients will be treated using an HDR brachytherapy unit. Cancer treatment will improve through number and type of brachytherapy procedures performed annually.
Malta	Improvement of Treatment Planning and Quality Assurance System for	The treatment planning system and Quality Assurance system of the Radiotherapy Department at the Sir Paul

	Radiotherapy	Boffa Hospital in Malta will be improved. Cancer patients will benefit from the improved control rates from radiotherapy.
Moldova	Upgrading Efficiency of External Beam Therapy for Oncology Patients	Technology for modern cobalt teletherapy and modern Orthovoltage therapy will be transferred; quality assurance/quality control and safety in teletherapy administration will be improved; capacity to treat cancer by teletherapy and Orthovoltage therapy will be increased; a National Cancer Registry, in co-operation with the IARC, will be set up; and the Moldavian Oncological Centre will reach Centre of Competence standards. More than 1,000 patients requiring radiotherapy will be treated safely and cost-effectively annually at an internationally accepted level.
Nigeria	Improved Radiation Physics Capability	The aim of this project is to improve the quality of cancer treatment in northern Nigeria by provision of training and equipment. Radiation hazard to patients and staff will be reduced.
Pakistan	Nuclear Medicine and Radiotherapy Support	The project aims to strengthen nuclear medicine and radiotherapy services throughout Pakistan. It will mean better management of breast cancer and coronary artery disease, thereby reducing the mortality from these diseases.
Palestine	Feasibility Study for a Central Radiotherapy Facility	Through sending international experts to the country, a realistic assessment of the present situation will provide the necessary guidance to the relevant authorities for deciding on the matter of establishing a cancer therapy facility in the territories under the jurisdiction of the Palestinian Authority.
Sri Lanka	Improving the Quality of Radiotherapy Services	The aim of the project is to improve the quality of the radiotherapy services through development and implementation of a quality assurance (QA) programme. The project will contribute to the establishment of a national network of the radiotherapy services and lead to better access forthe rural population to cancer treatment.
Sudan	Establishment of a High-Dose Brachytherapy Unit at Gezira, Wad Medani, Sudan	The aim of this project is to assist the Government of Sudan in upgrading cancer treatment capabilities at Gezira, Wad Medani, through the establishment of a High Dose Rate (HDR) brachytherapy unit.
Thailand	Quality Assurance Programme in Radiotherapy	The project aims at setting up a new brachytherapy calibration system at the secondary standards dosimetry laboratory (SSDL), and preparing a document on quality control (QC) procedures in radiotherapy that can be used by the hospitals in Thailand. A QA/QC programme in radiotherapy centres and a new calibration facility at SSDL will

		result in better treatment for patients.
Thailand	Development of a Postgraduate Programme in Medical Physics	The aim of the project is to develop a postgraduate programme in medical physics in order to provide qualified medical physicists to serve the hospitals where nuclear technologies are used. It will have direct and long-lasting impact on the quality of radiotherapy, diagnostic radiology, and nuclear medicine.
Tunisia	Upgrading Tele- and Brachytherapy Techniques for Increased Treatment Capacity	The aim of the project is to improve the country's cancer treatment capabilities through the introduction of microsource high dose rate (mHDR) brachytherapy at the national referral center in Tunis, and the establishment of high-precision multipurpose linear accelerator facilities (conventional, conformal, and stereotactic) in Tunis, Sousse and Sfax. Upgrading the radiotherapy facilities will increase the number of patients treated, enhance the effectiveness, and reduce hospitalization of patients. Agency support will contribute to a reduction of patients sent abroad for treatment, thereby enabling the Government to make substantial savings in health expenditures.
Tanzania	Improvement of Radiotherapy Services	The project aims to improve the accuracy of radiotherapy planning and treatment by providing a simulator. Provision of a simulator will be a very useful addition in order to increase the accuracy of treatment of tumours, to the benefit of patients.
Tanzania	Improvement of Radiotherapy Services, Phase II	The aim of this project is to further improve the quality of radiotherapy at the Ocean Road Cancer Institute, Dar Es Salaam. Old equipment will be decommissioned, a source change will be carried out and new equipment will be procured. This will include a new Co-60 teletherapy machine and high dose rate brachytherapy. Training to strengthen Medical Physics will also be provided.
Uruguay	Radiotherapy Improvement Through Use of Simulators	By the IAEA providing a simulator and training local staff in its use, the counterpart will be able to provide better radiotherapy to cancer patients.
Uzbekistan	Upgrading Cancer Treatment Services	The IAEA provides expert advice and guidance on the creation of new facilities and better use of the existing ones; supplies dosimetry equipment with expert advice and trains local staff in its use. The upgraded facilities will improve the accuracy and safety of treatment for cancer. The skills and technology transferred to the Institute would serve as guidelines for promoting radiation safety culture in radiotherapy in the country.
Vietnam	Application of Accelerator Technique for Medical Treatment	The aim of this project is to establish a national linear accelerator centre for radiotherapy services with a strong quality assurance component. The facility is expected to broaden the scope of cancer treatment in

		the country. Overburdened national oncological centres will benefit. The high-energy radiation technique will meet the needs of many patients. Overall, cancer treatment will improve and will have a significant impact on general healthcare in the country.
Yemen	Establishment of a National Centre for Radiation Oncology	The first teletherapy and brachytherapy facilities will be established at the National Centre for Radiation Oncology at Al-Ghamhouri Teaching Hospital in Sana'a. The facilities will be run by national staff trained in radiation oncology. Over 1,000 patients will be able to receive radiotherapy treatment per year (cancer is the second major cause of death in Yemen). Treatment programmes that include preventive screening and early detection will, in the long term, improve the control of cancer in Yemen, reduce the mortality rate, and increase life expectancy for cancer patients. Patients will no longer have to travel abroad for diagnosis and treatment.
Zambia	Establishment of a Radiotherapy Facility	The aim of the project is to establish a radiotherapy facility in Lusaka to treat the growing number of cancer patients in Zambia, without having to send them to neighbouring countries for treatment.
Zimbabwe	Upgrading Radiotherapy Services	The aim of the project is to improve the quality of radiation treatment at Mpilo Hospital, Bulawayo, through provision of additional equipment including decommissioning and replacement of the existing Co-60 unit, a new treatment planning system, upgrading the dosimetry system, and training. The patient waiting list will be reduced by 50%. Better maintenance of radiation therapy units will allow them to function without a break. The radiotherapy technical staff will be better trained and have a safer working environment.
Zimbabwe	Upgrading Radiotherapy Services, Phase II	The aim of this project is to improve radiotherapy services in Zimbabwe by upgrading existing facilities, and staff training. The focus of phase II will be on the Parirenyatwa Hospital, Harare. The patient waiting list will be reduced. Maintenance of radiation therapy units will reduce downtime, and the radiotherapy staff will be better trained and have a safer working environment.