



Strengthening patient radiation safety in the United Arab Emirates

The challenge

The number of people undergoing radiological examinations and being exposed to radiation has significantly increased over the past 10 years, including in the United Arab Emirates. United Arab Emirates hospitals operate state-of-the-art equipment, and the Radiation Safety Principles (Justification, Optimization and Dose Limitation) are applied fully in these hospitals. However, procedures for radiological examinations needed to be optimized to enhance image quality, patient dose and patient radiation safety, and the number of medical professionals available to meet the needs of a growing number of patients was limited. Finally, the local referral guidelines that were in place to guide patient referrals and the justification for radiological examinations needed to be enhanced.

The project

The IAEA, through a two-year technical cooperation project, has helped enhance capacities in the field of radiation safety and dosimetry in the participating hospitals, in order to ensure radiation protection for patients and workers in diagnostic and interventional radiology and nuclear medicine.

At the start of the project, expert missions were carried out to assess the quality assurance and quality control programmes for radiology and nuclear medicine at the participating hospitals. In addition, the equipment used in the hospitals was analysed with regard to image quality, doses of radiation administered to patients and the radiation safety for patients and workers.

Based on the outcome of the expert missions, appropriate training through fellowships, scientific visits, and national training courses and workshops was provided for national medical staff. Where necessary, hospital equipment was also upgraded. The training focused on quality assurance and quality control management in radiology and nuclear medicine, patient dosimetry and radiation safety in nuclear and molecular imaging practices, patient dosimetry in radiology practices, and dose optimization. The IAEA provided support in the development of patient referral guidelines for radiological and nuclear medicine procedures. Two workshops were held to raise awareness of radiation risks and approaches to optimize radiation doses to patients.



IAEA expert provides technical assistance on radiation protection in diagnostic radiology, June 2014, Dubai, United Arab Emirates.

The impact

Over 225 medical professionals (50% of whom were women), including radiologists, nuclear medicine physicians, medical physicists, radiographers, nuclear medicine technicians and regulators, have now updated their knowledge of radiation safety and dosimetry in the fields of radiology and nuclear medicine. An upgraded patient radiation protection procedure is also in place, which has strengthened the application of the IAEA international safety standards for the radiation protection and safety of radiation sources at the national level to control patients' radiation exposure. Additionally, a Quality Management System for Image Quality and Optimization of Patient Doses is in place in the participating hospitals.

The hospitals can now ensure the highest level of safety and protection for patients, medical professionals and the environment. The medical professionals are well aware of radiation risks and approaches to optimize radiation doses to patients. The application of the upgraded Radiation Protection Principles has become an established practice in the participating hospitals. National diagnostic reference levels have been established for a variety of practices, such as adult computed tomography, mammography, and paediatric and adult dental practices.

The project has facilitated and improved communication and cooperation between hospitals and health authorities. The enhanced networking has resulted in a unified approach to mammography measurements in four of the participating hospitals, and in the sharing of quality control tools among all participating hospitals.

A professional development programme on patient radiation protection in radiology and nuclear medicine has been created. Trained medical professionals will share the knowledge gained with their colleagues at their own and other hospitals, which contributes to the sustainable impact of the project. Additionally, the training has enabled participants to acquire points needed for their continuing medical education (CME) programme.

PROJECT INFORMATION

Project No: UAE9011

Project title: Strengthening the National Programme on Patient Radiation Safety and Dosimetry

Duration: 2014–2016 (2 years)

Budget: €109 500

Contributing to:



Partnerships and counterparts

The project was implemented in cooperation with the Ministry of Health, the Abu Dhabi Health Authority (HAAD/SHEA) and the Dubai Health Authority.

Facts and figures

- Seven hospitals increased radiation safety for both patients and workers in radiology.
- Four hospitals increased radiation safety in the field of nuclear medicine.
- 225 medical professionals were trained in radiation safety and dosimetry.

The science

Procedures for radiological examinations aim to keep the patient dose as low as reasonably achievable (ALARA), while maintaining the necessary image quality for the diagnostic purpose.