

# Albania enhances radiotherapy treatment for cancer patients with IAEA support

By Jeremy Li



**Medical staff preparing for a radiotherapy treatment session with the first linac machine at the radiotherapy department of the University Hospital Centre “Mother Teresa”, in Tirana.**

(Photo: University Hospital Centre “Mother Teresa”, Albania)

The lack of proper cancer care equipment and facilities in developing countries means that many patients are left untreated. Radiation therapy machines are an essential part of effective cancer treatment, but they are expensive to acquire and maintain. With the help of the IAEA, Albania has been able to provide radiotherapy for its cancer patients and is now adding to its fleet another efficient, state-of-the-art linear accelerator (linac).

In Albania, cancer continues to be a major public health problem. According to the country’s Ministry of Health, cancer is the second greatest cause of death (16.6%), after cardiovascular disease. Every year, there are about 7140 new cancer cases reported, of which 3900 need radiotherapy as part of their treatment. With a population of 3.3 million, Albania currently has five radiotherapy machines: a cobalt-60 teletherapy machine and a linac at the radiotherapy department

of the University Hospital Centre “Mother Teresa” in the capital Tirana, one linac in the neurosurgery department of the same hospital and two linacs in private practice.

The Austrian Government helped Albania to acquire the first linac machine for the radiotherapy department of the University Hospital Centre in 2015. The IAEA assisted with the commissioning of the machine and helped to train the medical staff in machine handling and radiation safety.

In addition, the IAEA is supporting Albania with the installation of another linac machine at the University Hospital Centre later in 2017. The IAEA’s support includes the provision of quality assurance equipment that measures the radiation levels used and helps to make sure that the machine is properly calibrated and the patients are receiving the prescribed doses, said Brendan Healy, a radiotherapy medical physicist at the IAEA.



### **Integrating cobalt-60 machines and linear accelerators for cancer treatment**

Linacs and cobalt-60 (Co-60) machines are two of the most commonly used pieces of equipment for external beam radiation therapy, a procedure in which high-energy beams are used to kill tumour cells. Both Co-60 machines and linacs have been used for cancer treatment since the 1950s.

When it comes to the options for radiotherapy there is no standard answer. An equipment choice should be the result of careful analysis that considers not just the technological characteristics of the machines but also the local infrastructure, the evaluation of maintenance requirements, affordability and the availability of well-trained personnel, according to May Abdel-Wahab, the Director of the Division of Human Health at the IAEA.

“We want our Member States to be fully aware about the different infrastructure needs for the effective utilization of radiotherapy

equipment before purchasing a particular machine,” she said.

### **Keeping it safe: training and fellowship**

Due to the complexity of the radiotherapy process, radiation oncologists, medical physicists and radiation therapists — the three types of medical professionals instrumental in carrying out the treatment — must undergo rigorous training to ensure a safe and successful procedure for the patients and safety for themselves.

After a new radiotherapy machine is delivered to a country and about to begin operation in clinical settings, the IAEA supports the recipients in three ways: it arranges for machine-specific training by the manufacturer; it supports medical professionals in taking up fellowships in countries that already have similar equipment in operation; and it sends experts to verify the commissioning process of the machine, in the interests of both effectiveness and safety.

### **The first linac machine at the radiotherapy department of the University Hospital Centre “Mother Teresa” in Tirana.**

(Photo: University Hospital Centre “Mother Teresa”, Albania)