

Supporting the strengthening of quality and safety practices during the transition from Co-60 to LINAC technologies

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19–20 September 2017

IAEA Scientific Forum

**Nuclear Techniques
in Human Health**

Prevention, Diagnosis, Treatment



ALBANIA 2016

(Oncology Service UHC)

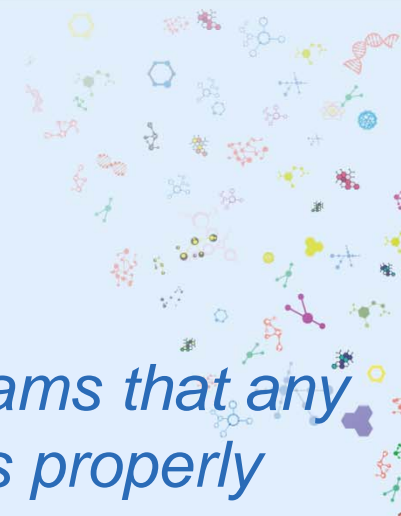


Year	Population	Median Age	Fertility Rate	Density (P/Km ²)	Urban Pop %	Country's Share of World Pop	World Population	Albania Global Rank
2016	2,903,700	34.5	1.78	106	64.5 %	0.04 %	7,432,663,275	139

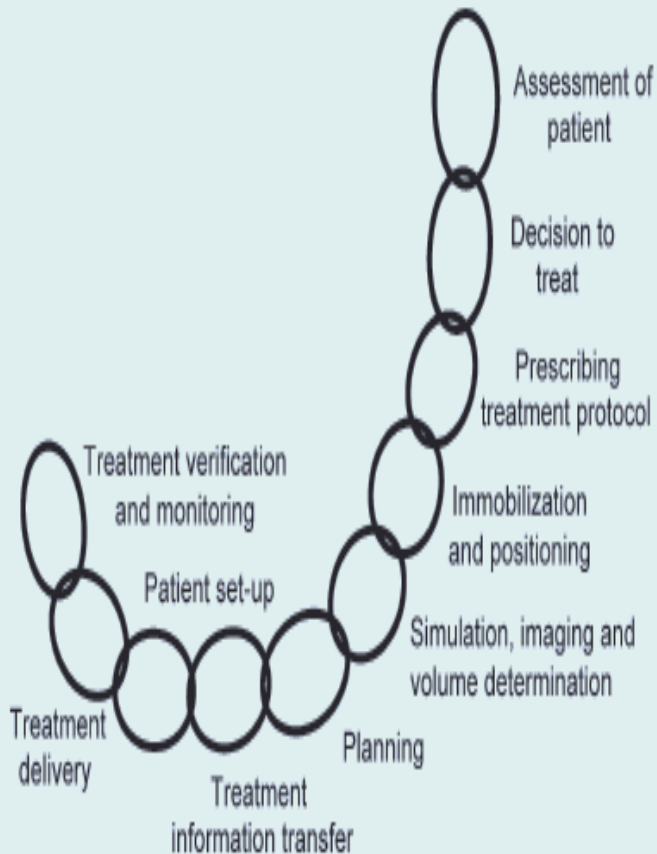


- ***New cancer patients*** **5710**
- ***New patients undergoing RT*** **1016**
- ***New courses of treatment in RT*** **1618**

Challenges



To ensure QC&QA programs that any link of this chain works properly



- Improvement in human resources
- Improvement in infrastructure and technology
- Standardization of radiotherapy (to reduce overload per machine and staff, well defined protocols)

Evolution of RT Department under TC projects with IAEA



Ortovoltage

TPS XIO + Focal PC
CT Sim Emotion

HDR Ir 192

**CT sim Big Bore
PHILIPS**



2002

2005

2006

2008

2009

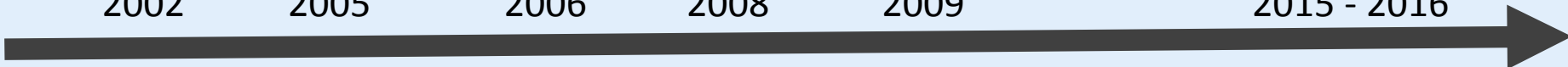
2015 - 2016



Co -60 Elite

Co-60 Equinox

**1st LINEAR
ACCELERATOR**



2015 Radiotherapy New Building

Contributor: MOH



Transition from COBALT to LINAC

ELITE- 80

- Manual data input
- Symmetric jaws
- Co 60 source
- Only one wedge valid
- The smallest field size 5x5cm
- No second monitor

EQUINOX - 100

- Digital data input
- Asymmetric jaws
- Co 60 source
- All wedges available (dynamic W)
- The smallest field size 3x3cm
- Second monitor check

LINAC

- MOSAIQ – patient information management system, reducing data entry errors
- MLC (80 Multi Leaf Collimator)
- No Radioactive source (photons and electrons)
- Motorized wedges
- The smallest field size 1x1cm
- iView (MV image) - for patient position verification



Work Load (Oncology Service UHC)

Total number of treated patients

Year	Cobalt therapy	Ortovoltage	Linear Accelerator	Brachytherapy
2015	1100	360	0	
2016	903	286	429	

**+ 158 patients
May-December**

Machines

Linac (6,18MV)	~800pat/yr
Cobalt 60	~500pat/yr
Ortovoltage	~300pat/yr

*Regular
Maintenance Contract*

RT Staff

➤ Radiation Oncologist	7	~ 230pat/yr
➤ Medical Physicist	6	~270pat/yr
➤ RTT	10	~120pat/yr
➤ RT nurse	1	

*Training Programme
only for RO since 2004*

Innovation



- ❖ Hypofractionated RT (Breast cancer patients)
- ❖ Reirradiate cancer patients
- ❖ Irradiate Pediatric Patients
- ❖ Irradiate patients with GI tumors

By end of 2017- early 2019

- The second Linear Accelerator with Cone Beam CT
- A new TPS - MONACO for IMRT and VMAT
- Implementation of advanced techniques IMRT & VMAT



Way Forward



- Strengthening the development of a national plan for radiation oncology
- Continued government commitment for sustainable financing in RT
- Avoiding waiting list and work overload
- Human resources for RT
- Expansion of access to RT
- Supporting research

The image features a vibrant blue background with a series of concentric, semi-transparent circular bands that create a sense of depth and movement. The bands are slightly offset from each other, giving the impression of a spiral or a series of overlapping rings. In the center of the composition, the words "Thank You" are written in a clean, white, sans-serif font. The text is bold and stands out prominently against the darker blue background.

Thank You