



Institute of Radiotherapy and Oncology – Skopje 2007

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AROME

Association of Radiotherapy and Oncology of the Mediterranean arCa

Institute of Radiotherapy and Oncology - Skopje

In R. Macedonia with 2,1 million population, the Institute of Radiotherapy and Oncology (within the University Clinical Center in Skopje) is the only institution which treats patients with malignant diseases using all modalities of conservative anticancer therapy, available in our country.



Approx. 2800 new patients treated annually



24 places for outpatient treatment

140 beds for inpatient and outpatient treatment




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Epidemiology

- National cancer register exists,
- Beside IRO malignant diseases are treated at the clinics for hematology and pediatric oncology
- Centralized system, with comprehensive data register as an advantage (reliable and consistent HPA)
- Heavy workload, but simple unification and introduction of new treatment protocols (CHT as well as RT) and easy QC



Epidemiology

Approximately 2800 new cases per year (2006)

- 700 breast cancers (25%)
- 504 lung cancers (18%)
- 364 head and neck cancers (13%)
- 280 GI cancers (10%)
- 588 gynecologic cancers (21%)
- 140 urogenital cancers (5%)
- 84 CNS tumors (3%)
- 133 Other (5%)

Personnel

- 37 doctors including 7 pathologists, 29 radiation oncologists, 1 radiologist
- 7 medical physicists
- 1 hospital engineer
- 1 engineer, network administrator
- 4 other highly qualified personnel
- 20 radiation technologists
- 50 nurses
- 16 lab personnel



Once upon a time...

The collaboration between the Republic of Macedonia and the IAEA in the field of radiotherapy began in **November 1995**, by submission of a TC project named “Modernization of brachytherapy”, through the liaison office (Ministry of science).



April 1996 - expert visit from the IAEA

Pointed out:

- insufficient and obsolete radiotherapy equipment (“Barazzeti” cobalt unit from 1963, Phillips LINAC from 1977 and Curriethron using Cs-137 LDR sources from 1979)
- affluent clinical experience and potential for adequate development of the Institute

Suggested:

Significant expanding of the submitted project aiming at providing **new equipment and training** of the personnel



“MODERNIZATION AND IMPROVEMENT OF RADIOTHERAPY (RER/6/009)”

September 1996 marks the start of the process of modernization of IRO as well as the general modernization and improvement of radiotherapy in R. Macedonia with the assistance of the IAEA.



Contribution of the IAEA (equipment)

- 1997 – equipment for basic dosimetry, 2.5D ROCS system for planning, literature on radiotherapy
- Dislocation of the old cobalt and disposal of the old radioactive source in Germany
- 1998 Cirrus Cobalt machine installation begins
- 1999 February-set to function



Contribution of the IAEA (equipment)



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Contribution of the IAEA (equipment)

- The old “Currietron” was disassembled and the Cs137 sources were deposited in France
- 2001 “Nucleation's Selectron” LDR afterloader was installed
- June 2002 – a new “Nucletron” classical simulator is being installed and set to function
- January 2005 new “GammaMed-*plus*” brachytherapy HDR afterloader installed and set to function in May 2005.



Contribution of the IAEA (equipment)



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Contribution of the IAEA (equipment)



Contribution of the IAEA (education)

1997–2004 realization of numerous fellowships:

- 3 and 4 months fellowships for 8 doctors - radiation oncologists,
- 4 and 6 months fellowships for 4 physicists,
- 3 months fellowships for 4 radiation technologists

- Numerous ESTRO courses



Contribution of the government of RM

- Renewing and improving the protection of the bunkers for the telecobalt unit and brachytherapy (“Nucletron Selectron” LDR and “GammaMed-*plus*”HDR) afterloaders
- Building of a completely new facility for the donated classical “Nucletron Oldelf” simulator
- Participation with certain amount in each of the project's financial constructions



Effects of the IAEA's assistance in the technical cooperation program

- Providing the essential radio therapeutic equipment
- Education of personnel
- *Support in the efforts for making the Government and the other medical authorities aware of the need for modernization of radiotherapy in R. Macedonia*



Targeting higher level

The project called “Accelerator line” started in 2002 in order to provide the IRO with sophisticated equipment and facilities for modern radiotherapy.

This project was completed with the start of the new line (composed of “GE” spiral CT simulator with LAP moving lasers, 9 working stations, Eclipse TPS and two Varian “Clinac 23EX” accelerators with multileaf collimators and EPID), settled in a new building, in march 2004.





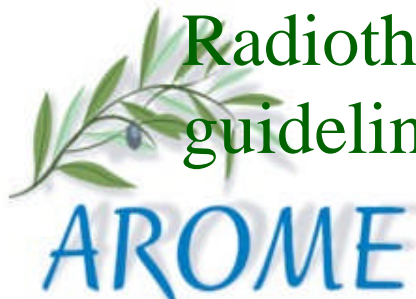
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Closure of one chapter

- January 2005 - request for audit mission under the TC project RER/6/012, *QA/QC in Radiation Oncology*, during the *IAEA Cancer Management meeting*
- April 2005 - official request for audit send to the IAEA
- June 2005 - audit team scheduled for the period from 17 – 21 October 2005
- August 2005 - IAEA/WHO Directory of Radiotherapy Centers, DIRAC and QUATRO guidelines



Deserving a dessert

- Audit mission was carried out as scheduled, from 17-21 October, 2005
- Recommendation by the audit team :
Institute of Radiotherapy and Oncology -
Skopje meets the criteria needed for the level
of competence

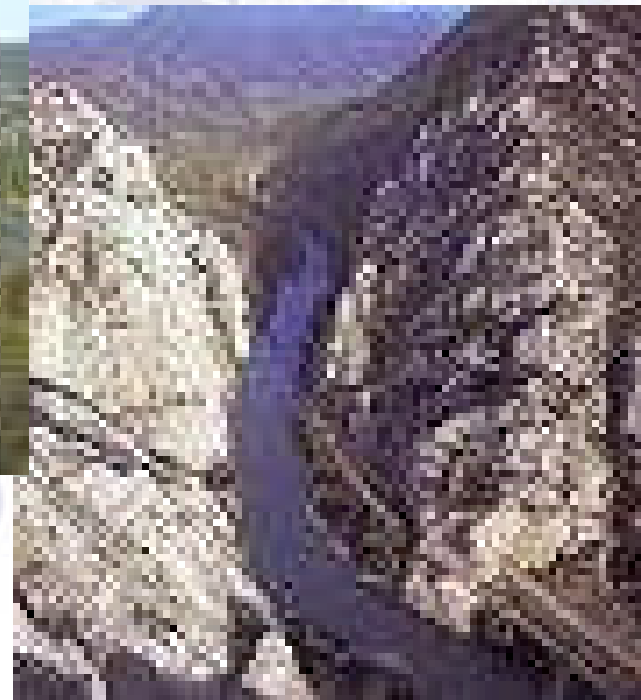


The story goes on

- Finalization of past TCP with the Agency - Installation of orthovoltage unit at IRO
- Ongoing TCP - Introduction of IMRT at IRO
- Fellowships for 2 doctors, 2 physicists and 1 RTT



Demir Kapija or The Iron Gate





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