MEDICAL PHYSICISTS STAFFING IN RADIATION ONCOLOGY: LAST TWO DECADES IN LITHUANIA

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MEDICAL PHYSICIST – ESSENTIAL AND IMPORTANT SPECIALITY IN CANCER TREATMENT

AT LEAST 50% OF ALL CANCER PTS WILL RECEIVE RT

THERE ARE IMPRESSIVE RESULTS REGARDING MP’s IN LITHUANIA
The questionnaire was developed and sent to all RT centers in Lithuania. Data were collected for 2011-2012 yr.

Earlier data were received during projects EURAQA (pan-European Radiation Quality Assurance) and QUARTS (Quantification of Radiation Therapy Infrastructure and Staffing Needs).
RT SERVICES ARE PROVIDED BY 4 PUBLIC HEALTH ORGANIZATIONS:

- Institute of Oncology, Vilnius University
- Hospital of Lithuanian University of Health Sciences Kaunas Clinics and their branch Oncology Hospital
- Klaipeda University Hospital
- Republican Siauliai Hospital
MEDICAL PHYSICISTS (MP’S) IN RT CENTERS

Until 1995  2 from 5 (40%) radiotherapy centers were without MP’s

1996–2000  All RT centers have at least one MP’s
            (after 1-2 month training at Institute of Oncology, VU)

2010  In RT centers were employed 26 FTE medical physicists

2012  28,25 FTE medical physicists

(The number of FTE MP’s was 10 at the large and 4,25 - at the small centers)
Medical Physicists in RT centers

- 1995: 5
- 2000: 7
- 2010: 26
- 2012: 28,25
MAIN CAUSES LED TO INCREASED NUMBER OF MP’s IN LITHUANIA

- EU directives for member states to ensure safety and quality of the RT treatment

- Implementation of new RT equipments and technologies

- Increasing number of new cancer pts
  (The number of people with cancer per 100 thousand populations has increased twice during the last two decades)

- The onset of training programs at the universities
MP’S WORKLOAD

- In 1994 one MP has had **1129** pts/year
- In **2012** on average **228** pts/year
  - at the large RT centers - **262** pts/year
  - at the small RT centers - **195** pts/year
# MP’S WORKLOAD (pts/year)

<table>
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<tr>
<th>Recommendations</th>
<th>Facts</th>
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<tr>
<td><strong>ESTRO (2005)</strong></td>
<td>Lithuania 2012</td>
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<td><strong>ACRO (2012)</strong></td>
<td>Poland 2011</td>
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<td><strong>MP’s pts/year</strong></td>
<td><strong>Australia 2006</strong></td>
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<tr>
<td>450-500</td>
<td>228</td>
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<td>200-300 (25%IMRT)</td>
<td>234</td>
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<td><strong>Sweden 2000</strong></td>
<td>293</td>
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**MP’S WORKLOAD**
(MP’s per linear accelerator)

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- large RT centers - 2,5 MPs/linac
- small RT centers - 4,2 MPs/linac
MP’S WORKLOAD
(MP’s per linear accelerator)
In **2001** MP’s specialty was included in the list of specialties in medicine.

**Until 2003** were no institutions for the education and training of MP’s. All of them have been trained abroad (former USSR or USA).

**In 2003** at Kaunas University of Technology was launched Master study program in Medical physics.

From **2010** medical physicists studies have started at the second university - Medical faculty of VU (in collaboration with Institute of Oncology, VU).
PROBLEMS

- A majority of teaching staff educating MP’s lacks practical experience at the RT
- Activity of MP’s are not licensed
- The accreditation requirements still are not prepared
ACTIVE PLAYERS:

- Professional societies
- Oncology centers
- Radiation Protection Center
- Radiotherapists and clinics administrators

PASSIVE PLAYERS:

- Government
- Ministry of Health
SCHEME FOR CAREER MP’s IN LITHUANIA

Basic education in physics, biomedicine or technology – 4 years in different faculties

Postgraduate education. Level of Master on medical physics – 2 years, diploma Medical Physicist

Postgraduate training in clinical environment – at least 2 years (under the supervision of medical physicist expert) – license Qualified Medical Physicist

Continuous professional development, 5 years cycle time, credit point system – license Medical Physicist Expert
CONCLUSIONS

- The demand for MP’s in RT is sufficient. In 2012 at 4 RT centers were employed 28,25 FTE MP’s.

- During last two decades the number of MP’s increased by over 5,7 times, and their workload shrinked more than 5 times.

- 2 universities are preparing MP’s. Since 2010 graduates are awarded the diploma of the medical physicist.
The **Master program** of MP’s is harmonised with similar programs provided by different universities around Europe and implements the requirements of EU Directives.

The **qualification of the teachers do not match the requirements** of ESTRO, EFOMP and EU.

Still remain a need of the government **approval** for MP’s career, training, licensing and accreditation, schema.
Thank you for attention