

## Current status of medical physicist certification in Poland and neighbouring regions.

**Aim.** To present the current status of certification of medical physicists in Poland, (2) to describe the role of different institutions in the process of training and certification, (3) to outline the content of the undergraduate curriculum and residency programme prior to certification.

**Qualifications** of medical physicists in the clinical environment are regulated in Poland but the regulations are not unified throughout the EU. If a medical physicist with a certificate from another EU country wants to work in Poland, he has to undergo not only certification but also evaluation of educational background against the national standard. Detailed regulations were issued by the Centre for Postgraduate Medical Education in the year 2002. The evaluation takes into account the content of the training programme completed abroad and the period of training and is done by a committee of experts. The final decision is made by the Minister of Health and can alternatively grant a certificate, recommend additional training in Poland before the certificate is granted, or organise an exam. In case of significant deviation from the Polish standard a certificate is denied. The committee of experts meets four times per year unless there is no application.

The speciality of medical physics covers radiotherapy and diagnostic and nuclear medicine. Regulations come from: (1) the Law by the Minister of Health in which qualifications, residency programme and process of certification are described; (2) the Atomic Law which regulates work with the use of ionising radiation and which enforces the employment of medical physicists for certain jobs.

Prior to a residency programme a master's degree in physics is required. Graduates of disciplines other than physics can enter a residency programme after an additional process of evaluation. A regulation from 2003 by the Minister of Health approved enrolment in the residency programmes also of graduates of informatics but this provision is now questioned due to the insufficient background in physics during the university course on informatics. The particular provisions were passed before the signing of the Bologna agreement, which recommended the division of uniform five-year long university studies into three-year bachelor's and two-year master's degree. It has not been clarified yet whether a person who completed a bachelor's degree in a discipline other than physics before a master's degree in physics can qualify. Current applicants have usually completed both levels in physics. A final exam (practical and theoretical) ends the three years of the residency programme.

### *Content of the residency programme (programme of specialisation in medical physics)*

The document describing the programme, contact hours, duration of the programmes, specific courses required, and teachers' and tutors' qualifications has been elaborated by a committee of experts comprising mainly medical physicists with contributions from radiologists and radiation oncologists. The final form was published in 2003 by the Minister of Health.

A residency programme reflects the existing situation in which approx. 90% of medical physicists in Poland work with the use of ionising radiation, in particular in radiotherapy. The total number of contact hours is 600 during 3 years. Residents have to stay for a certain period of time in departments where they can learn activities described in a programme of specialisation (1). The tutor can modify the length of stay of the resident in these departments unless it compromises the quality of learning and provided that it meets the minimal duration required (in radiotherapy – 8 weeks in training in radiotherapy including nuclear medicine, 8 weeks in diagnostic imaging and 4 weeks – diagnostic methods using non-ionising radiation).

Table 1. Modules' description and contact hours during residency programme in medical physics.

Module	Contact hours
Human anatomy	40
Radiobiology	50
Radiation protection	30
External beam therapy	120

Brachytherapy and therapy using open isotopes	70
Therapy using non-ionising radiation	50
Diagnostic imaging (X-ray, nuclear medicine, MRI, ultrasound, thermography)	90
Bioelectric and biomagnetism in diagnostics, biocybernetics	40
Statistics	40
Legal and administrative issues	30
Total	600

Residents are recommended to attend courses (theoretical and practical) on different parts of the programme. The courses are usually offered by some hospitals at low fees, but the completion of a course is not mandatory. From 2009 on all courses which are mandatory in certain medical specialities during residency programmes have been supported in Poland by European Union money, but so far the grant has not been extended to all specialities including medical physics.

### ***Organisation of residency programmes***

The Centre for Postgraduate Medical Education (CPME) is a state institution responsible for carrying out and supervising residency programmes in all medical and clinical specialities (physicians, medical physicists, physiotherapists, etc). It has branches in all provinces and twice a year handles the recruitment procedure. The director of CPME is nominated by the Minister of Health and this position must be filled by a professor of one of the specialities which CPME handles. Committees of experts (including one for medical physics) elaborate and review residency programmes and evaluate hospitals that provide the training. The work for the committee is paid to a value supporting the costs associated with the job, which itself is considered as a “duty of the profession”. Hospitals that want to hold a residency programme have to prove their ability to provide the full spectrum of training or to subcontract a missing part to another hospital.

The residency programme is based on a concept of full time work under the supervision of a tutor. The residents have to pass interim exams before their tutors. Different institutional policies apply to whether the tutor is solely responsible for checking interim progress or selected staff members examine the residents.

Professional guidance is organised. A national consultant in medical physics appointed by the Minister of Health advises the Centre for Postgraduate Medical Education and the Centre for Postgraduate Medical Education in all issues. The role of the national consultant goes beyond the process of specialisation and certification as he is on the official list of institutions which have to be consulted before new regulations addressing radiotherapy, nuclear medicine and diagnostic imaging are approved.

### ***Organisation of final exam and certification***

At national level the Centre for Medical Examination (CEM) organises exams and formally supervises training for all medical and clinical specialities. The final exam is held by the CEM sub-committee, which includes 3-4 medical physics specialists including a national consultant and a representative of a scientific society. Exams are held twice a year. The certificate has the form of the title of specialist in medical physics and formally comes from the state.

### ***Scientific guidance***

The Polish Society of Medical Physics (PSMP) supports all activities associated with residency programmes. By regulation the society nominates two specialists to the CEM Committee who carry out the final exam and also impacts the elaboration of the training programme and evaluation of training institutions.

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Notable input to the training is also provided by the Polish Society of Radiation Oncology but on a personal rather than institutional basis as some committee members are associated with radiotherapy.

### *Continuing education programme*

A continuing education programme for medical physicists is not mandatory yet and a process of periodical revalidation of the certificate is not present.

### **References:**

<sup>1</sup>Programme of specialisation in medical physics. Centre for Postgraduate Medical Education. Warsaw 2003 (in Polish).