

Career Progression for Clinical Medical Physicists in AFOMP Countries

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What is a Clinical Medical Physicist?

Defined in AFOMP Policy #1:

*The Role, Responsibilities and Status of the Clinical
Medical Physicist in AFOMP*

Austral Phys Eng Sci Med 32, 175-179

Typical Career

Longer than 40 years



Factors Influencing Career Path

- Employment contract
- Employment sector (private/government)
- CPD opportunities
- University appointments
- Country's economic status

AFOMP Policy #5

- Defines how a physicist's career should progress
- Offers guidance to employers to develop career structures
- Consulted colleagues in Asia, Australasia, Europe, North America, Africa

Education and Training

- Well-structured
- Formal
- Comprehensive
- Appropriate assessment & examination
- Result in formal certification (c.f. International Medical Physics Certification Board)

Education and Training

- Detailed in AFOMP Policy #3
- Undergraduate degree in an appropriate physical science or engineering
- Masters or higher in Medical Physics (taught papers and research project)
- Structured program of in-house training (minimum of two years)

Career Structure

- Not often defined in private sector
- Sometimes defined in negotiated national/state /provincial employment contracts that set out a career and salary structure.

AFOMP Recommends a Multi-Level Career Structure

Medical physicists should be employed under negotiated agreements that define qualifications, skills, attributes, experience, responsibilities, performance and accomplishments that must be achieved to be promoted from one level to the next.

Suggested 4-Level Structure

- Not implementable in all countries and hospitals (not intended that it should be)
- Each country/hospital should define their own structure to suit local conditions

Level 1

- Completed an undergraduate degree
- May still be doing clinical training (including masters degree)
- First 5 – 8 years of career
- No responsibilities for equipment or processes
- Work is of a general nature and under the direction of a higher-level physicist

Level 2

- Completed formal clinical training to IMPCB or IAEA recommended duration and standards
- Able to practice independently
- Normally in 6th – 12th year of employment
- Specialized in a particular area (e.g. radiotherapy or diagnostic imaging)

Level 2

- Work independently with reference to a Level 3 or 4 physicist
- Define a problem and formulate strategies for solving it
- Interpret novel or non-standard data
- Make value judgments in unfamiliar situations
- Communicate scientific advice clearly and accurately to others
- Recognize fault situations and take appropriate action

Level 2 Responsibilities

- Train Level 1 physicists and other staff
- Help or lead specifying & commissioning new equipment, procedures and techniques
- Measure and analyze data for quality assurance and safety programs
- Keep abreast of current developments in their specialization
- Lead the provision of a special procedure (e.g., brachytherapy, peptide receptor radionuclide therapy)
- Participate in local medical physics society activities

Level 3

- Have extensive post-training experience
- Have a significant level of responsibility, leadership and management
- At least 12 years of employment
- Have extensive experience in their specialization
- Contributing to R & D at a local level

Level 3

- Lead and coordinate the work of Level 1 and 2 physicists
- Manage colleagues under their control
- Participate in strategic planning for their department
- Have developed links to a university to participate in teaching and research (where possible)

Level 3 Responsibilities

- Coordinate training of Level 1 physicists and other staff
- Lead specifying & commissioning new equipment, procedures and techniques
- Ensure provision & reliability of quality assurance programs
- Oversee and validate calibrations and maintenance
- Lead strategic developments in services
- Participate in committees and activities within their hospital as a whole
- Participate in national medical physics society activities

Level 4

- Have overall responsibility for planning, organizing and leading medical physics staff in a hospital or a group of hospitals
- Recognized nationally (and possibly internationally) as an expert in their own area of specialization
- At least 15 years of employment
- Possibly have an adjunct university appointment

Level 4

- Lead the strategic development of medical physics services in their hospital(s)
- Engage and communicate effectively with senior management at hospital and national level
- Develop and implement local & national protocols
- Coordinate and develop the research strengths, particularly with university-level institutions
- Actively participate in medical physics professional organizations and related scientific organizations and committees at a national and international level

Continuing Professional Development

- Medical physicist must stay up-to-date with developments in their area of practice
- All physicists should be engaged in a program of professional development
- AFOMP Policy #4 “Recommendations for Continuing Professional Development Systems for Medical Physicists in AFOMP Countries” should be consulted and a system implemented in each hospital.

Temporary Cessation of Employment

- Physicists may cease their employment for a period because of health issues, extended family leave, etc.
- Provision should be made to enable such physicists to re-enter the medical physics workforce with minimal career impact
- For example, a program of continuing professional education should be followed during the absence

Academic Appointments

- Help to promote the medical physics profession to students and encourage joint research projects to the benefit of the university, the physicists, and their department
- A formal adjunct academic appointment to a university should be made for clinical physicists, where possible
- Joint university/clinical department employment appointments are encouraged

Professional Status

- Contracts under which medical physicists are employed should recognise that their education, training and expertise is usually at a higher level than that of other medical scientist and technologists
- Thus employment contracts for physicists should be separate from those of other medical employees

Professional Status

- The status of the clinical medical physicist should be similar to that of a qualified medical specialist
- This appears to be the situation in several countries (such as Finland, the Netherlands, and Hungary)
- Unfortunately, in many countries it is not accorded an appropriate status

Professional Status

- Being a medical physicist is a recognised occupation by the International Labour Organization
- It is still not recognised as an occupation or profession in many countries
- Medical physics professional organizations should encourage their governments to formally recognise the profession of the medical physicist

THANK YOU