IOMP ACCREDITATION OF MEDICAL PHYSICS EDUCATION PROGRAM, ACCREDITATION OF RESIDENCY AND ACCREDITATION OF CONTINUOUS PROFESSIONAL DEVELOPMENT PROGRAMMES

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Abstract— **Application of ionizing radiation in healthcare in diagnosis and treatment has increased multifield in fast few decades. Ionizing radiation needs to be used appropriately and carefully because of its inherent risks and therefore sufficiently trained and qualified medical physicists are required in various specialties of healthcare employing ionizing radiation for diagnosis and/or treatment. In recent years the demand for clinically qualified medical physics (CQMP) has increased and many institutions/universities have started the medical physics education programmes to meet the rising demand. However, the curriculum of medical physics education and training need to be harmonized so as to produce competent CQMP. There must be an assessment system to evaluate minimum acceptable competency and homogeneity To access the minimum standards of the education and provide credibility of the program the medical physics education programs needs to be accredited. Further accreditation serves as a vital process in assessing and assuring the quality of educational programs and therefore to fulfil the objectives, International Organisation of Medical Physics (IOMP) in 2016 has started accreditation of medical physics education programs, residency programmes and CPD accreditation of education and training events. The IOMP accreditation programmes have many advantages such as it validates the highest teaching standards and best preparation of medical physicists for the work environment and provides visibility and credibility of the accredited program. The details regarding IOMP accreditation are available on IOMP website at https://www.iomp.org/accreditation/.**

Keywords— **Medical Physicists, accreditation, residency program, continuous professional development.**

I. INTRODUCTION

Medical physics is a rapidly growing area needing a high degree of knowledge and professional competency due to the rise in complexity of treatment procedures, increasing access to medical technology, and the requirement of coordination between the disciplines of medicine, physics, and biomedical engineering. The unprecedented surge in medical physics competency in the last 2- 3 decades is due to the implementation of specialized physics intensive procedures such as particle therapy, image guided & intra operative radiotherapy, advanced imaging, and nuclear medicine techniques. In this scenario to handle this new technology era the quantity of qualified medical physicists needs to be in consonance with the competency needed. There is a special requirement for education and training of medical physicists which led to the opening of numerous medical physics educational programs around the world. However, the training and educational curriculum needs to be tuned with the requirement to produce the competent "Clinically Qualified Medical physicists (CQMP) not for the present but also for the future needs. Furthermore, the major outcome of the academic programme is to provide the students with a thorough grounding in medical physics, critical thinking, scientific rigor, and adequate professional ethics**,** to facilitate the integration of the graduates in a healthcare profession, where the benefit of the patient is at the centre of all activities.

As per International Labour Organization (ILO), International Atomic Energy Agency (IAEA), World Health Organisation (WHO), International Organisation of Medical physics (IOMP -Policy statement no. 1) and many other organisations recognises medical physicists working in healthcare environment as "Health Professionals" and therefore the CQMP need to undergo a structured residency program after completion of postgraduation in medical physics. **IAEA Human Health Series No. 25** document endorsed by IOMP and AAPM, envisages the roles and responsibilities of CQMP in the different specialties of medical physics (Radiation Oncology, Nuclear Medicine, Diagnostic Radiology, and Interventional Radiology) and recommends minimum requirements for their academic education and clinical training, including recommendations for their accreditation, certification and registration, along with continuing professional development.

According to IAEA *a clinically qualified medical physicist (CQMP) must have:*

- *A university degree in physics, engineering, or equivalent physical science*
- *Appropriate academic qualifications in medical physics (or equivalent) at the postgraduate level,*
- *At least two years (full time equivalent) structured clinical in-service training undertaken in a hospital.*
- *The IAEA also states that "It is emphasized that the holder of a university degree in medical physics without the required hospital training cannot be considered clinically qualified." Further this education and training should be recognized by a national accreditation body.*

Health care across the world is undergoing a period of rapid transformation because of economical, technological, and regulatory forces which brings both great challenges and great opportunities for the discipline of medical physics. To meet the growing requirement of qualified medical physicists, various institutes/universities are running medical physics education programs, however, to access the minimum standards of the education and provide credibility of the program the medical physics education programs needs to be accredited. Education Training Committee (ETC), IOMP has tried to compile the data of medical education programmes across the globe, the information is updated constantly with the feedback received. Further feedback to update the information is highly appreciated. Approximately more than 39**0** Medical Physics Undergraduates / Postgraduates and research programme are available around world. The details of the number of programs according to IOMP Regional Organization [RO] region is as follows,

- MEFOMP-21 (0.08 programs/million population)
- AFOMP ~ 119 (0.03 programs/million population)
- USA ~ 42 (0.127 programs/million population)
- ALFIM ~ 46 (0.076 programs/million population)
- EFOMP- 105 (0.141 programs/million population)
- FAMPO- 37 (0.026 programs/million population)
- CANADA- 18 (0.49 programs/million population)

The details of the institutions and the programmes RO wise is available on IOMP website at https://www.iomp.org/education-training-resources/

Now the question is whether all the medical physicists trained by various universities/institutions fulfil the expectations to be competent CQMP? Whether the medical physicists trained by different universities/institutions are competent enough to discharge the duty of unsupervised clinical medical physicists? There must be an assessment system to evaluate minimum acceptable competency and homogeneity. IAEA IBSS recommends that *"Competence of persons to be assessed by the State/ Govt. by having a formal mechanism for registration, accreditation, or certification of medical physicists in the various specialties (e.g., diagnostic radiology, radiation therapy, nuclear medicine). States/Govt. that have yet to develop such a mechanism would need to assess the education, training and competence of any individual proposed by the licensee to act as a medical physicist and to decide on the basis of either international accreditation standards or standards of a State where such an accreditation system exists, whether such an individual could undertake the functions of a medical physicist, within the required specialty."*

II. WHAT DO PATIENTS AND SOCIETY EXPECT FROM THEIR MEDICAL PHYSICIST AS HEALTH PROFESSIONAL?

- Professional Competence
- Educational qualifications/Certification
- Problem solving- finding solutions.
- Independence of decision and execution
- Practical skills, Clarity in communication, Integrity, confidentiality
- Humanity- compassion

Therefore, accreditation of the medical physics education and residency program and certification of medical physicists is required.

III. WHAT IS ACCREDITATION?

Accreditation is the process of external quality review to scrutinize colleges, universities, and educational programs for quality assurance and quality improvement. The important parameters required to be assessed for accreditation of the program are,

1. Status of the institution
2. Governance & administration
3. Vision, mission, objectives
4. Courses/programmes, curriculum & graduate outcomes
5. Approach to teaching & learning
6. Planning, programme review & quality assurance mechanism
7. Level of internationalisation

IV. ADVANTAGES OF ACCREDITATION

Accreditation serves as a vital process in assessing and assuring the quality of educational programs. It involves rigorous evaluation and verification of various aspects of an institution or program to ensure it meets predetermined standards. Accreditation in educational programs benefits students, institutions, employer, policy makers and society.

Accreditation is important because it helps determine if an institution meets or exceed minimum standards of quality and helps students determine acceptable institutions for enrolment in addition employers often require evidence that applicants have received a degree from an accredited school or program. Accreditation also fosters a culture of continuous improvement, encouraging institutions to assess their programs and make necessary enhancements to meet evolving educational needs. Additionally, accreditation can

make an institution eligible for government funding and grants, attracting resources that can further enhance program quality and infrastructure.

V. STAKEHOLDERS OF ACCREDITATION OF MEDICAL PHYSICS PROGRAMS

The quality of educational programs, the safety and competence of the graduates, and the integrity of the accreditation process is important. Stakeholders in the accreditation process of medical physics education programs are:

Society – Accreditation improves educational programs and graduates from these programs provide better quality health care.

Students - They can expect their institution to meet a level of quality that is worthy of their money, time, and effort.

Educational institutions - Competitive in today's student recruitment market.

Health care employers - Can assume that graduates of accredited programs have similar skills and that they have met the requirements expected of all entry-level practitioners.

Furthermore, accreditation offers many positive features to disciplines and occupations. The presence of accreditation adds validity to the profession's claims to quality, increasing consumer confidence at all levels.

For the public, accreditation promotes the health, safety, and welfare of society by assuring competency of public health professionals. Accreditation promotes public trust in educational programs by ensuring accountability and transparency. Accreditation facilitates global recognition and comparability of educational programs.

VI. IOMP INITIATES TOWARDS ACCREDITATION OF MEDICAL PHYSICS EDUCATION AND RESIDENCY PROGRAMMES.

IOMP is established in 1962 and is dedicated to improving medical physics worldwide by disseminating systemized knowledge through education and training of medical physicists, to advance the practice of physics in medicine by fostering the education, training, and professional development of medical physicists. For harmonization of medical physics education program as per the IOMP Policy Statement No. 2 which provides general guidelines for member organizations in defining the basic requirements for education and training of medical physicists. It aims to serve as a reference for medical physics organizations, education institutions and health care providers and authorities in planning and development of their national infrastructures for education, training, and certification of medical physicists and for maintenance of standards of practice. To accomplish the goals, IOMP Accreditation Board [AB] has been set up in 2016 to ensure that accredited medical physics programs satisfy the highest standards established by IOMP in collaboration with other international organizations.

The IOMP accreditation board accredits medical physics degree/Post graduate programs, medical physics education and training institutions/centres, residency program and education and training events.

VII. ACCREDITATION STANDARDS FOLLOWED BY IOMP ACCREDITATION BOARD

Applicants must meet standards to be accredited in accordance with

1. IAEA Publication, Training Course Series No. 56 (Endorsed by the IOMP) which also incorporates the IOMP Model Curriculum: http://www-pub.iaea.org/books/IAEABooks/10591 /Postgraduate-Medical-Physics-Academic-Programmes
2. IOMP Policy Statement No. 2 'Basic requirements for education and training of medical physicists'

   https://www.iomp.org/wp-content/uploads/2019/02/iomp_policy_statement_no_2_0.pdf

The IOMP Accreditation Board ensures the Standards are met by the institute/University imparting the Medical Physics education covering all the aspects. Resources alone are not sufficient to assure quality. Evidence must be obtained that assures that the educational institution and specifically the Medical Physics education program monitor the performances of the graduate, post graduate and that they are indeed able to demonstrate successful achievement of the program goals.

For accreditation of Medical Physics education programme IOMP accreditation board scrutinises the information from following fields

1. Status of the institution
2. Governance & administration
3. Vision, mission, objectives
4. Courses/programmes, curriculum & graduate outcomes
5. Approach to teaching & learning
6. Planning, programme review & quality assurance mechanism
7. Level of internationalisation

8. Physical resources and facilities
9. Student support services
10. Industry advisory board
11. Staffing resources
12. Financial resources
13. Membership, partnership, and community engagement
14. Areas of Excellence

The very first MPE program accredited by IOMP accreditation Board [AB] was master's Medical Physics [MMP] program of ICTP- Trieste University, Trieste, Italy for 3 years from 1 November 2016 and process continued. IOMP AB has accredited and re-accredited the following MPE programs.

VIII. MASTERS IN MEDICAL PHYSICS PROGRAM ACCREDITATION BY IOMP ACCREDITATION BOARD

1. The Catholic University of Korea – Full Accreditation
2. KAIST University – Full Accreditation
3. Yonsei University – Full Accreditation
4. ICTP-Trieste University joint Master of Advanced Studies in Medical Physics- Full Accreditation
5. Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, Argentina - The postgraduate program (3 years) in Medical Physics specialized in Radiotherapy, Nuclear Medicine, and Diagnostic/ Interventional Radiology- Full accreditation.

IX. MASTERS IN MEDICAL PHYSICS PROGRAM RE-ACCREDITATION BY IOMP ACCREDITATION BOARD

1. ICTP & Trieste University joint Master of Advanced Studies in Medical Physics, Trieste, Italy. Re-accredited for 5 years (1 August 2022 – 31 July 2027)
2. The Catholic University of Korea, Seoul Republic of Korea – Re-accredited for 5 years (1 January 2023 – 31 December 2027)
3. KAIST University, Daejeon, Republic of Korea – Re-accredited for 5 years (1 January 2023 – 31 December 2027)
4. Yonsei University, Wonju, Republic of Korea – Re-accredited for 5 years (1 January 2023 – 31 December 2027)

The details about the IOMP accreditation procedure, accreditation manual, the application forms and accredited program are available at https://www.iomp.org/accreditation/

X. IOMP ACCREDITATION OF CONTINUING PROFESSIONAL DEVELOPMENT [CPD] EVENTS

As per IOMP policy statement 1, Medical Physicists working in healthcare environment are health professionals and need to be certified as Clinically Qualified Medical Physicists [CQMP] according to IAEA HHS 25 guidelines endorsed by IOMP. To maintain and enhance the professional competence, and the ability to work independently, practising medical physicists should undertake a continuing professional development (CPD) programme which should include attendance at national and/or international conferences and courses on topics related to their field of specialization. They should also regularly consult relevant scientific journals and literature. To maintain the certification/licence as CQMP, medical physicists need to acquire certain CPD points by attending/participating in educational/training programmes. CPD is one of the essential measures in maintaining professional competency, particularly for certified CQMPs. Its goal is to keep professional knowledge and skills up to date. The concept of CPD varies from country to country, but, in general, includes participation in educational and scientific activities such as conferences, symposia, courses and workshops, and education and training duties of medical physicists and other clinical professionals. The educational /training programmes awarding CPD points needs to be accredited by authorised/recognised accreditation board. Formal CPD programmes should include an evaluation mechanism, such as a credit-based system, where CQMPs are awarded CPD points for each activity they participate in. These should form part of the criteria for re-certification as CQMP. To encourage CQMP's to acquire the CPD points through Continuing Professional Development events by acquiring the CME/CPD points, IOMP has started in 2019 the accreditation of CPD events provided by educational institutions, professional and scientific associations, hospital departments, units or divisions, research organizations and other scientific organizations. IOMP does not accredit CPD events organized by the industry. The concept of CPD is related to knowledge, skill and competence acquired during lifelong learning. The outcome of CPD should lead to an improvement in professional practice.

The IOMP accredits CPD events conducted/organised by:

1. Educational institutions
2. Professional and scientific associations
3. Hospital departments, units, or divisions
4. Research organizations and other scientific organizations.

The IOMP does not accredit CPD events organized by the industry.

XI. IOMP CPD ACCREDITATION STANDARDS REQUIREMENTS:

- Target audience - A clearly defined target audience
- Learning objectives of the program - Clearly defined learning objectives and a clear statement of what a participant is expected to learn. The learning objectives must be specifically defined to indicate what knowledge, skills and competences participants are expected to obtain after attending the activity.
- Program contents and structure- A detailed statement outlining the contents and structure of the program and the expected outcome.
- Teaching methodology - A clear statement about what teaching methodology will be used (lectures, presentations, discussions, technical demonstration, hands-on training)
- Supporting information - Supporting information should be sufficient to support the learning outcome; material should be accessible and up to date at the time of the event.
- Teaching staff - The organizers of the activity should demonstrate that the teaching staffs are qualified to deliver the educational programme and meet the learning objectives.
- Evaluation and quality assurance- There should be a clear statement outlining how the organizer will conduct an evaluation of the activity.
- Commercial interest - Education providers must guarantee that non-biased education is given.
- Administrative arrangements and verification of attendance- The organizers of the activity should describe the mechanism in place to record and verify participation (attendance list, badges, etc.).
- Details of financial support from organisation/ company/ firm/ foundation etc.

List of CPD accreditation by IOMP Accreditation Board

1. CPD: Dosimetry of Small Fields in External Beam Therapy: Reference and Relative Dose Determination 2nd – 4th October 2019, SCMPCR Training Room and National Institute of Cancer Research and Hospital (NICRH), Dhaka, Bangladesh.
2. ICMP 2019 (ALFIM), Santiago, Chile, 8 – 11 September 2019.
3. CPD: Hands-on Workshop: Commissioning, Planning and Quality Control for the IMRT/VMAT Treatment Techniques. 25th – 27th April 2020, University of Colombo, Sri Lanka and National Cancer, Institute, Maharagama, Sri Lanka
4. Universität Heidelberg (Germany) Online Teaching Course: Particle Therapy, September 2020.
5. CPD: SCMPCR E-learning Program (ELP-03): Basic Principles and Advanced Clinical Applications (webinar platform) 5-26 Feb 2021.
6. MEFOMP virtual conference, 5 -7 April 2021.
7. Virtual Summer School 2021: Image Guided Radiation Therapy (IGRT) and Advanced Treatment Techniques during Sept. 20th – Nov. 14th, 2021, German Cancer Research Center (DKFZ)
8. Online Teaching Course Particle Therapy- program during 22- 26 November 2021. German cancer Research Center (DKFZ).
9. SCMPCR E-learning Program (ELP-05): Advanced Techniques in Radiotherapy1st October 2021 – 22nd October 2021, Dhaka, Bangladesh.
10. 4th Summer School in Medical Physics: Radiobiology and Biological Modelling for Radiotherapy, German Cancer Research Center (DKFZ), 5 – 30 Sept 2022
11. Course type 3: Online teaching course "Particle Therapy" online phase Oct. 17 – Nov 20, 2022, online phase Nov. 21- Nov 25, 2022, German Cancer Research Center (DKFZ).
12. SCMPCR E-learning Program (ELP-06): Clinical Medical Physics in Modern Radiotherapy Date:01 July 2022 – 22 July 2022.
13. SCMPCR Hands-on Workshop (HW-06): Modern Quality Assurance in Modern Radiotherapy during 15th – 18th February 2023.
14. MEFOMP2023 Medical Physics conference, 19–22 May 2023, Muscat, Oman.
15. Online Teaching Course "Particle Therapy", OCT. 09 – NOV. 19, 2023, German cancer Research Center (DKFZ)

XII. IOMP ACCREDITATION OF MEDICAL PHYSICS RESIDENCY PROGRAMS

The objective of the medical physics residency program is to develop human resources as a professional medical physicist (Clinically Qualified Medical Physicists - CQMP) who is competent to participate actively in the individual

clinical field independently. To accomplish this goal, adequate organization, facilities, staff, patience, and educational environments should be provided. The major outcome of the residency program should be to provide residents with clinical training in a hospital under certified/qualified medical physicists so as to acquire the required practical skills and professionalism. The medical physics residency programme should be conducted in a clinical environment, having adequate infrastructure and the facilities to support resident education and training. The staff involved in teaching and training should have adequate training and experience. Further the equipment and instruments specific to the specialty concerned should be available. The duration of clinical training should not be less than 2 years' full time equivalent for a given specialty. The training should be carried out under the direct supervision of a qualified/certified and well experienced medical physicist in the area of specialty who can be designated as clinical training supervisor of the resident. If a candidate desires to undergo clinical training in two specialties in the same institution, the duration of the clinical training should not be less than 3 years full time equivalent. The competency-based assessment approach should be adopted.

IOMP accreditation board scrutinises the information from following fields,

Specialty specific requirements for accreditation for radiation oncology physics, diagnostic and interventional radiology physics, nuclear medicine physics are given in the manual, the broad parameters are,

1. Institution and staff
2. Program director
3. Equipment and other resources
4. Clinical/Practical Training areas/topics

The details and application forms available at https://www.iomp.org/wp-content/uploads/2020/02/IOMP-Accreditation-of-MP-Residency-manual-application-form-11-February-2020-AAC.pdf

Residency Program accreditation by IOMP Accreditation Board

1. The Residency program (1 year) in Radiotherapy Physics at Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, ARGENTINA- Full accreditation
2. The Residency program (1 year) in NM&DIR Physics at Fundación Médica de Río Negro y Neuquén (FMdeRNyN), and Facultad de Ciencias Médicas de la Universidad Nacional del Comahue (UNCo), Río Negro, ARGENTINA- Initial accreditation

XIII. SOME OF IMPORTANT BENEFITS OF IOMP ACCREDITATION

- Reputation of accredited programs and courses which will result in more demand for these education and training activities.
- Provision of an international dimension to an education event that will attract participants from other countries.
- Evidence of highest teaching standards and best preparation of medical physicists for the work environment
- Publication of accredited programs and courses on the IOMP website

The IOMP accreditation Board for 2022-25

Prof. Arun Chougule, India – Chair
Prof. Golam Abu Zakaria – Vice Chair
Prof. Rodolfo Alfonso, Cuba
Dr. Huda Al Naami, Qatar
Dr. Christoph Trauernicht, S. Africa
Prof. Shinji Kawamura, Japan
Dr. S.D Sharma, India
Dr Laura Padilla, USA

IOMP issues the accreditaion certificate cetificates to accrediated programms


International Organization for Medical Physics (IOMP)

CERTIFICATE OF ACCREDITATION

Radiation Therapy Physics
Korea Advanced Institute of Science and Technology (KAIST)
Daejeon, S. Korea

The IOMP accreditation board certifies that the Radiation Therapy Physics Postgraduate Course, at Korea Advanced Institute of Science and Technology (KAIST), Daejeon, S. Korea having met its requirements is granted accreditation

Commencing 1st August 2019 until 31st July 2022

Professor Arun Chougule
Chair, Education and Training Committee &
Chair, Accreditation Board

Masters Level Program
ACCREDITED

Professor Madan Rehani
President, IOMP


International Organization for Medical Physics (IOMP)

CERTIFICATE OF RE- ACCREDITATION

Medical Physics Postgraduate Course

Department of Biomedicine & Health Sciences, College of Medicine, Catholic University, Republic of Korea

The IOMP accreditation board certifies that the Medical Physics Postgraduate Course, at Catholic University, Seoul, Republic of Korea having met its requirements is granted re- accreditation

Commencing 1st January 2023 until 31st December 2027

Arun Chougule
Professor, Arun Chougule
Chair, Education and Training Committee &
Chair, Accreditation Board

Masters Level Program
ACCREDITED

Professor John Damilakis
President, IOMP


International Organization for Medical Physics (IOMP)

CERTIFICATE OF ACCREDITATION

Master of Advanced Studies in Medical Physics (MMP)

International Center for Theoretical Physics (ICTP) &

Università degli studi di Trieste

The IOMP accreditation board certifies that the MMP having met its requirements is granted accreditation

Commencing 1st November 2016 until October 31, 2019

Professor John Damilakis
Chair, Education and Training Committee

Masters Level Program
ACCREDITED

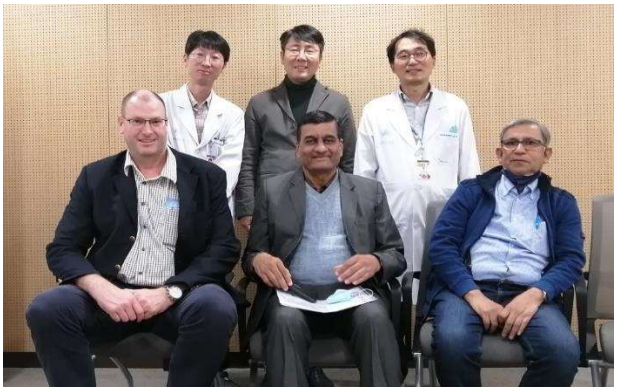
Professor Slavik Tabakov
IOMP President

Appendix: Photos taken during IOMP accreditation visit.

Tour of St. Mary's Hospital

KAIST faculty and students

Re-accreditation at Yonsei University



Asan Medical Center, S Korea

Programm Discussion with Prof. L Bertocchi and Prof Renato Longo, ICTP, Trieste, Italy

Interaction with First year students in Info Lab, ICTP, Trieste, Italy

REFERENCES

1. IAEA Publication, Training Course Series No. 56 [Rev. 1] (Endorsed by the IOMP) which also incorporates the IOMP Model Curriculum: https://www-pub.iaea.org/MTCD/publications/PDF/TCS- 6(Rev.1) web.pdf
2. IOMP Policy Statement No. 2 -Basic requirements for education and training of medical physicists https://www.iomp.org/wpcontent/uploads/2019/02/iomp_policy_statement_no_2_0.pdf
3. International Standard Classification of Occupations (2012) ISCO O8, vol I. International Labour Organization, Geneva https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf
4. IAEA (2013) Roles and responsibilities and education and training requirements for clinically qualified medical physicists. IAEA Human Health Series No. 25. IAEA, Vienna, https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1610_web.pdf
5. IAEA Safety Standards, General Safety Requirements Part 3 No. GSR Part 3 “Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards”, STI/PUB/1578, IAEA, Vienna, 2014. https://www-pub.iaea.org/MTCD/Publications/PDF/Pub1578_web-57265295.pdf
6. AFOMP Policy Statement no. 4: Continuing professional development systems in AFOMP countries. Australas PhysEngSci Med DOI 10.1007/s13246-012-0163-z, 2012.
7. EFOMP Policy Statement No 10.1: "Continuing Professional Development for the Medical Physicist." Physica Medica 32 (2016) 7–11.
8. IOMP publication: IOMP accreditation manual, Medical Physics International, Journal, vol. 5, No. 2, 2017.
9. IAEA Guidelines for the Certification of Clinically Qualified Medical Physicists, Training Course Series No. 71, IAEA, Vienna (2021) https://www.iaea.org/publications/14746/guidelines-for-the-certification-of-clinically-qualified-medical-physicists
10. IAEA Audit Methodology for Medical Physics Clinical Training Programmes, Training Course Series No. 74, IAEA, Vienna (2022) https://www.iaea.org/publications/15199/audit-methodology-for-medical-physics-clinical-training-programmes
11. International Atomic Energy Agency, Clinical Training of Medical Physicists Specializing in Radiation Oncology Physics, TCS 37, IAEA, Vienna, Austria, 2009. https://www-pub.iaea.org/mtcd/publications/pdf/tcs-37_web.pdf
12. International Atomic Energy Agency, Clinical Training of Medical Physicists Specializing in Diagnostic Radiology, TCS 47, IAEA, Vienna, Austria, 2010. https://www-pub.iaea.org/MTCD/Publications/PDF/TCS-47_web.pdf
13. International Atomic Energy Agency, Clinical Training of Medical Physicists Specializing in Nuclear Medicine, TCS 50, IAEA, Vienna, Austria, 2013. https://www-pub.iaea.org/MTCD/Publications/PDF/TCS-50_web.pdf

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