

SAFETY STANDARDS AND REGULATIONS

The Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (BSS, GSR Part 3, Interim)*, co-sponsored by the IAEA, WHO, the Food and Agriculture Organization of the United Nations, ILO, the United Nations Environment Programme, the Pan American Health Organization, the European Commission and OECD's Nuclear Energy Agency, requires that national regulatory bodies define a set of regulations regarding the education and training competence and number of clinically qualified medical physicists, in order to ensure radiation protection of patients in all facilities.

Many African countries have regulations in place concerning the provision of services by qualified medical physicists in imaging facilities. Please consult your national authorities responsible for regulation of ionizing radiation practices for further information.

CAPACITY BUILDING

The IAEA and AFRA have been helping several countries in Africa to develop medical physics capacity to ensure safety in medical imaging. This support includes human resource development, as well as procurement of the specialized quality control equipment required for the work of medical physicists.

Kindly contact your IAEA National Liaison Officer or AFRA National Coordinator for more information on current capacity development projects for medical physicists.

*<http://www-ns.iaea.org/standards/documents/pubdoc-list.asp?s=11&l=83>

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SAFE MEDICAL IMAGING

Why you need a Medical Physicist



IAEA
International Atomic Energy Agency



AFRA



World Health Organization

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ENSURING RADIATION PROTECTION FOR PATIENTS

Africa is rapidly acquiring high-tech medical imaging equipment such as multi-slice helical computed tomography (CT), single photon emission computed tomography (SPECT) and positron emission tomography (PET), as well as hybrid systems that allow the fusion of morphologic and functional information.

This advancement in technology greatly improves diagnostic capacity. However, it can significantly increase population exposure to ionizing radiation. Safe use of the technology requires medical justification to ensure the appropriateness of the procedure, as well as optimization of protection to ensure that the radiation dose to the patient is commensurate with the medical purpose.

Justification and optimization must be done carefully and with special considerations, particularly in the case of sensitive patient groups such as pregnant women and children.

Most medical imaging facilities in Africa do not have qualified medical physicists who can provide professional advice on radiation safety.



WHAT DOES A MEDICAL PHYSICIST DO ?

Medical physicists contribute to the safe and effective use of radiation in order to achieve the best diagnostic or therapeutic outcome of the prescribed medical procedure. To achieve this, they:

- Evaluate practices that involve medical exposure and optimize the physical aspects of diagnostic and therapeutic procedures in terms of benefits and risks;
- Calibrate imaging equipment to ensure accurate and safe delivery of radiation to patients;
- Implement appropriate quality assurance programmes, including quality control measures;
- Assess radiation doses and associated risks to patients (especially for pregnant women and children) and personnel.

WHO IS A MEDICAL PHYSICIST ?

A qualified medical physicist must have completed the minimum training requirements for medical physics, which are subject to national or regional regulations. They include:

- Academic training in physics and medical physics;
- Adequate supervised clinical training in an appropriate hospital environment.

RECOGNITION OF MEDICAL PHYSICISTS

The Call for Action* adopted at the Bonn Conference on Radiation Protection in Medicine, organized by the IAEA in collaboration with WHO, concluded that recognition of medical physics as an independent health profession with specific radiation protection responsibilities is a key step to strengthen radiation safety culture in health care.

The World Health Organization (WHO) promotes the role of medical physicist in ensuring safety and quality in medical exposures. WHO is supporting the implementation of the Basic Safety Standards and the Bonn Call for Action. This includes scaling-up the role of medical physicists in diagnostic imaging centres, including radiology and nuclear medicine services.

The International Labour Organization (ILO) also recognizes medical physicists as professionals that are considered to be an integral part of the health workforce.

However, further efforts are needed to foster the recognition of clinically qualified medical physicists in Africa, which is still limited.



*<https://rpop.iaea.org/RPOP/RPoP/Content/News/bonn-call-for-action-joint-position-statement.htm>