

# Policy Statements

## Definition of a Qualified Medical Physicist

1. A qualified medical physicist is an individual who is competent to practice independently one or more of the subfields of medical physics.

- a) Therapeutic Medical Physics, which pertains to
  - (1) the therapeutic applications of x rays, gamma rays, electron and charged particle beams, neutrons, and radiation from sealed radionuclide sources
  - (2) the equipment associated with their production, use, measurement, and evaluation
  - (3) the quality of images resulting from their production and use
  - (4) the medical health physics associated with this subfield
- b) Diagnostic Medical Physics, which pertains to
  - (1) the diagnostic applications of x rays, gamma rays from sealed sources, ultrasonic radiation, radio frequency radiation, and magnetic fields
  - (2) the equipment associated with their production, use, measurement, and evaluation
  - (3) the quality of images resulting from their production and use
  - (4) the medical health physics associated with this subfield
- c) Medical Nuclear Physics, which pertains to
  - (1) the therapeutic and diagnostic applications of radionuclides (except those used in sealed sources for therapeutic purposes)
  - (2) the equipment associated with their production, use, measurement, and evaluation
  - (3) the quality of images resulting from their production and use
  - (4) the medical health physics associated with this subfield
- d) Medical Health Physics, which pertains to
  - (1) the safe use of x rays, gamma rays, electron and other charged particle beams, neutrons or radionuclides, and radiation from sealed radionuclide sources for both diagnostic and therapeutic purposes
  - (2) the instrumentation required to perform appropriate radiation surveys
- e) Medical Magnetic Resonance Imaging Physics, which pertains to
  - (1) the diagnostic applications of magnetic resonance
  - (2) the equipment associated with magnetic resonance
  - (3) the quality of images and function studies resulting from the use of magnetic resonance
  - (4) the medical health physics associated with this subfield
- f) Medical Hyperthermia Physics, which pertains to
  - (1) the therapeutic application of heat
  - (2) the equipment associated with the therapeutic application of heat
  - (3) the medical health physics associated with this subfield

2. An individual will be considered competent to practice one or more of the subfields of Medical Physics if that individual is certified in that subfield by any one of the following:

- a) The American Board of Medical Physics
- b) The American Board of Radiology
- c) The American Board of Health Physics
- d) The American Board of Science in Nuclear Medicine
- e) The Canadian College of Physics in Medicine Additional certifying organizations may be added as they are recognized.

3. It is expected that an individual will not hold himself/herself out to be qualified in a subfield for which he/she has not established competency according to the requirements of paragraph 2.
4. The American College of Medical Physics regards board certification, in the appropriate medical physics subfield, and state licensure, in those states in which licensure exists, as the appropriate qualification for the designation of a Qualified Medical Physicist (adopted July 17, 1986; revised May 1, 1993, Revised November 29, 1999) (Res. 99-10) (Res. 04-4)

### **Diagnostic Radiology: Patient Dose and Entrance Skin Exposures**

A qualified medical physicist shall determine Patient Doses and Entrance Skin Exposures using measured data obtained in an acceptable manner under his/her supervision, and he/she shall communicate these results, their implications, comparisons, and appropriate recommendations, if any, to the care providers. The American College of Medical Physics opposes any method of Patient Dose and/or Entrance Skin Exposure determination which is not computed by a qualified medical physicist based on actual x-ray machine measurements performed under his/her supervision. (Res. 88-2), (Res. 99-2) (Res. 04-5)

### **Professional Nature of Medical Physics**

The American College of Medical Physics asserts and holds forth to individuals, to private organizations, to other professional organizations, and to all governmental entities, that the duties and responsibilities of the medical physicist are professional in nature, and for the protection of the health and safety of the general public, should be performed only by individuals who meet the requirements of a Qualified Medical Physicist (QMP) (ACMP Policy 99-10). Individuals who do not meet the requirements of a QMP may also perform medical physics duties, if they are working in a clinical environment under the direct supervision of a QMP and they have graduated from or are currently in a medical physics training program. Practicing medical physicists are expected to observe adopted standards of practice. (Res. 89-2), (Res. 2001-1)

### **Licensure for Medical Physicists**

The American College of Medical Physics supports licensure of Medical Physicists in the clinical environment throughout the United States and all its territories. (Res. 92-1), (Res. 99-1) (Res. 04-6)

### **Medical Physics Services**

The American College of Medical Physics states that the Physics Services 77300 series of codes correctly included in the CPT-4 document are services which, for the health and safety of the general public, must be performed by a qualified medical physicist or someone under his/her supervision. (Res. 92-2), (Res. 99-3) (Res. 04-7)

### **Medical Dosimetrist**

The American College of Medical Physics (ACMP) affirms the duties and responsibilities of the medical dosimetrist, to provide necessary calculations and to document radiation dose distributions, are properly furnished under the direct supervision of a qualified medical physicist. The ACMP supports the current educational, academic, scientific, and professional programs of the American Association of Medical Dosimetrists. The ACMP supports the Medical

Dosimetrists Certification Board examination as a mechanism by which a qualified Medical Dosimetrist demonstrates minimum competence in the profession. (Res. 92-3), (Res. 99-4) (Res. 04-8)

## **Federal Regulatory Responsibilities for Medical Devices**

The American College of Medical Physics urges that federal regulatory responsibilities for medical devices including the use of ionizing radiation be consolidated into one agency that, by virtue of their comprehensive regulatory position, will be in a better position to protect the public health and insure patient safety and will be better positioned to coordinate with the individual states to implement their oversight responsibilities and that this agency be the Food and Drug Administration. (March, 1993), (Res. 99-5) (Res. 04-9)

## **Radioactive Materials and Patient Safety**

The American College of Medical Physics urges the United States Nuclear Regulatory Commission and appropriate state licensing agencies that appropriately trained and experienced qualified medical physicists be named on the license for each use of radioactive materials, including afterloading devices, and radiation beams, as is currently done for Co-60 units, and such individuals be charged with the responsibility of insuring patient safety for the treatments delivered with such units. (March, 1993), (Res. 99-7) (Res. 04-11)

## **Manufacturer Provided Physics Services**

The American College of Medical Physics believes that the interest of all parties involved with radiological equipment assessments is best served by obtaining the necessary physics services only from qualified medical physicists. Moreover, the usage of service personnel or manufacturer's applications specialists to perform radiation safety, radiation dosimetry, image quality assessments, regulatory evaluations, and related tasks is not appropriate. Therefore, only qualified medical physicists should be utilized to address these physics assessments of radiological equipment. (Res. 94-1), (Res. 99-8) (Res. 04-12)

## **Editorial Policy for the American College of Medical Physics Newsletter**

1. All articles/letters must be of a professional/educational (not scientific/research) nature.
2. Only Full members, Provisional members, the executive director, and Corporate members may submit articles/letters to the newsletter except:
  - a) Corporate members may not use articles/letters for commercial purposes.
  - b) Articles/letters may be submitted by other than the above if sponsored in writing by one of the above except Corporate.
3. Articles/letters may not be used to respond to articles/letters appearing in other publications.
4. Articles/letters must be submitted in a form that is consistent with established formats and acceptable to the editor.
5. Articles/letters already published in media readily available to ACMP members should not be republished in the ACMP Newsletter unless of special import as determined by EXCOM.
6. While it is in the best interest to allow wide and free expression of professional issues, editorial discretion must be applied due to limitations on space. (Res 99-11) (Res. 04-14)

## **Policy on Accredited Training Prior to Certification**

The American College of Medical Physics supports requiring graduation from a CAMPEP accredited residency program as a pre-requisite for Board Certification in Medical Physics. We recommend that this requirement be in place by January 1, 2014. (Res. 03-1)

## **Medical Error Reduction**

The concept of patient safety as a quality measure is evolving and instrumental in the practice of medical physics. Patient safety is defined as freedom from accidental injury due to medical care, or absence of medical errors 1, 2, or absence of misuse of services 3, 4. In medical physics, these concepts can cover a variety of injuries and errors that occur at any stage in the diagnostic imaging or therapeutic treatment delivery processes. Such errors encompass, but are not limited to, events that are narrowly avoided (termed near misses) and events that cause harm to patients (termed sentinel events).

The ACMP supports the creation of a safety culture in the practice of medical physics. Through implementation of a patient safety program specific to medical physics, errors that affect patient safety can be minimized and often prevented from recurring. When errors occur, the responsible health care organization should respond by implementing a timely corrective action plan. The patient safety program should focus on the prevention of accidental harm through the prospective analysis and redesign of vulnerable patient systems. The patient safety program should encompass the following objectives:

- Monitor key processes.
- Self-identify errors that occur.
- Analyze each error to determine significance and the underlying factors -- the “root causes”.
- Implement an action plan -- “risk reduction strategy” -- to reduce the risk of similar errors from occurring.
- Compile data describing error frequency and type and the root causes of errors.
- Document and disseminate information about these errors, their root causes, and action plan(s) to permit the responsible organization and other health care organizations, where appropriate, to redesign their systems and processes to reduce the risk of similar errors from occurring.
- Periodically evaluate and assess the effectiveness of the patient safety program at reducing the risk of errors.

An effective patient safety program revolves around established benchmark procedures involving medical physics. ACMP supports the use of professionally accepted standards of practice in medical physics applicable to the diagnostic or therapeutic use of radiation in medicine. The responsible health care organization should monitor key processes established in these standards of practice and measure performance as a function of error reduction. (Res. 04-3)

1 Hurtado M, Swift E, Corrigan JM, eds. *Envisioning the National Health Care Quality Report*. Washington, DC: National Academy of Sciences; 2001.

2 McNutt R, Abrams R, Arons D. Patient safety efforts should focus on medical errors. *JAMA*. 2002;287(15):1997-2001.

3 Department of Health and Human Services. The Challenge and Potential for Assuring Quality of Health Care for the 21st Century.

Washington, DC: Department of Health and Human Services; 2000.

4 The President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry. Quality First: Better Health Care for All Americans; 1998.

Revised 08/5/09