MPPG #4 Levels of Supervision for Medical Physicists in Clinical Training

J. Anthony Seibert, PhD
Department of Radiology
University of California, Davis
Sacramento, California

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Members of the MPPG Committee

- Tony Seibert, Chair
- Jessica Clements
- Per Halvorsen
- Mike Herman
- Melissa Martin
- Jatinder Palta
- Doug Pfeiffer
- Bob Pizzutiello
- Beth Schueler
- Jeff Shepard
- Lynne Fairobent, Staff

Original Scope

- This practice guideline establishes appropriate supervision and scope for non-QMP individuals performing medical physics related tasks.

- After internal review comments were received, the scope of this document was changed.

Approved [insert date]*

~~AAPM Medical Physics Practice Guideline "X", a.:~~ Levels of Supervision in Clinical Medical Physics

1. Introduction

Within medical facilities, it is often necessary or desirable for individuals other than the Qualified Medical Physicist (QMP) to perform functions generally designated as the practice of medical physics, such as for the training of medical physics students or residents, or for the efficient and cost-effective collection of data. In such circumstances, the individuals performing these functions must be appropriately supervised and the scope of the functions to be performed must be carefully defined. This practice guideline only addresses individuals in the process of being a QMP. ~~establishes appropriate supervision and scope for non-QMP individuals performing medical physics related tasks.~~

It is the responsibility of all individuals to be familiar with the federal and state regulations regarding supervision that may take precedence over the recommendations in this document.

At the time of the writing of this document, the training pathways for entering the field of medical physics are changing to require an accredited clinical residency. It is important to recognize that there are individuals in the process of becoming board certified that will remain as "trainees" and for purposes of this document should be considered as if they are residents, as defined below.

2. Definitions

a. **Qualified Medical Physicist** - As defined by AAPM Professional Policy 1 [1].

b. **Competency** – For this document, means the demonstrated ability to perform independently the medical physics related task or function.

c. **Medical Physics Student** – An individual enrolled in a degree-granting program from an approved institution (program accredited by one of the organizations recognized by the Council on Higher Education Accreditation, or its successors), in medical physics, physics, or another relevant physical science or engineering discipline.

d. **Medical Physics Resident** – An individual enrolled in a structured training program designed to educate and train to a level of competency sufficient to practice medical physics independently. This individual must have obtained a master's or doctoral degree in medical physics, physics, or another relevant physical science or engineering discipline.

~~e. Quality Assurance Assistant – An individual who works under the auspices of a QMP and is not currently on a path to become a board certified medical physicist, and has received training in all work duties by a QMP with written documentation of the QMP's determination of the assistant's competency.~~

~~f.~~e. **General Supervision** – The procedure is performed under a QMP's overall direction and control but the QMP's presence is not required during the performance of the procedure. Under General Supervision, the training of the personnel who actually perform the procedure and the maintenance of the necessary equipment and supplies are the continuing responsibility of the QMP.

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d. **Medical Physics Resident** – An individual enrolled in a structured training program designed to educate and train to a level of competency sufficient to practice medical physics independently. This individual **must** have obtained a master's or doctoral degree in medical physics, physics, or another relevant physical science or engineering discipline.

~~e. **Quality Assurance Assistant** – An individual who works under the auspices of a QMP and is not currently on a path to become a board certified medical physicist, and has received training in all work duties by a QMP with written documentation of the QMP's determination of the assistant's competency.~~

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Final Scope/Purpose

- The purpose of this practice guideline is to address the levels of supervision necessary for the clinical training of medical physics students, residents, and medical physicists in training.

Key Definitions

- **Competency** – For this document, means the demonstrated ability to perform independently the medical physics-related task or function.

Key Definitions

- **Co-signing or co-signature** - The process of a obtaining a second signature or the formal procedure for authorizing a trainee to independently sign their work while working under the supervision of a QMP, who retains full responsibility for the trainee's work.

Key Definitions

- Qualified Medical Physicist (QMP) – as defined in AAPM Professional Policy 1

- For the purpose of providing clinical professional services, a Qualified Medical Physicist (QMP) is an individual who is competent to independently provide clinical professional services in one or more of the subfields of medical physics.

A Qualified Medical Physicist meets each of the following credentials:

- Has earned a master's or doctoral degree in physics, medical physics, biophysics, radiological physics, medical health physics, or equivalent disciplines from an accredited college or university; and
- Has been granted certification in the specific subfield(s) of medical physics with its associated medical health physics aspects by an appropriate national certifying body and abides by the certifying body's requirements for continuing education.

Key Definitions

- **Medical Physicist in Training** – An individual, who has met the requirements of, and is currently in the process of completing board certification in one or more of the subfields of medical physics.

Key Definitions

- **Medical Physics Student** – An individual enrolled in a masters or doctoral degree-granting program from an approved institution (program accredited by one of the organizations recognized by the Council on Higher Education Accreditation, or its successors), in medical physics, physics, or another relevant physical science or engineering discipline.

Key Definitions

- **Medical Physics Resident** – An individual enrolled in a structured training program designed to educate and train to a level of competency sufficient to practice medical physics independently. This individual **must** have obtained a master's or doctoral degree in medical physics, physics, or another relevant physical science or engineering discipline.

Key Definitions

- **Supervision:** Oversight of and acceptance of responsibility for the medical physics-related work performed by a Trainee or Student

- Three levels of supervision are defined in the document.

General Supervision

- The procedure is performed under a QMP's overall direction and control but the QMP's presence is *not required* during the performance of the procedure.
- The training of the personnel who actually perform the procedure and the maintenance of the necessary equipment and supplies are the continuing responsibility of the QMP.

Direct Supervision

- A QMP must exercise General Supervision and be *present in the facility and immediately available* to furnish assistance and direction throughout the performance of the procedure.
- It does not mean that the QMP must be present in the room when the procedure is being performed.

Personal Supervision

- A QMP must exercise General Supervision and *be present in the room* during the performance of the procedure.

Key Definitions

- **Supervisor** – A QMP that oversees the medical physics-related work of a supervised individual in a clinical environment.
- **Supervised Individual** – A medical physics student, resident or medical physicist in training performing medical physics-related tasks under the direction of a QMP.
- **Trainee** – The term “trainee” in this document is used to include medical physics residents and medical physicists in training.

Role of the Medical Physics Student

- Medical physics students **should** be capable of performing basic medical physics tasks, such as the collection of x-ray generator calibration or linear accelerator depth dose data.
- The student is not expected to analyze or make decisions regarding the data, but may make comments or recommendations to the supervising QMP.
- If the medical physics student works on clinical medical physics tasks, it **must** be under the personal or direct supervision of a QMP, as deemed appropriate by the QMP.

Role of the Medical Physics Resident

- Medical physics residents grow in the degree of responsibility and independence of clinical practice
- Early in residency, the resident **should** have responsibilities similar to medical physics students with personal supervision required.
- With experience and training, the resident **should** progress under direct supervision.
- Late in the residency, the resident **should** be able to function largely as a QMP, with the supervisor providing general supervision leading toward independence.

Role of the Medical Physicist in Training

- Medical physicists in training are expected to grow in the degree of responsibility and independence of clinical practice.
- With increasing experience, medical physicists in training **should** be able to function largely as a QMP, with the supervisor balancing the transition from supervision toward independence.

Responsibilities of the supervisor

- Must assume professional responsibility for the medical physics-related work done by the supervised individual with regular interactions
- Must review and co-sign all work of the trainee
- Must ensure continuity by delegating supervision to a QMP who provides coverage in absence

Responsibilities of the supervised individual

- Must *not* perform medical physics-related tasks without appropriate supervision
- In professional licensure states, supervised individuals with a temporary license in more than one subfield of MP must ensure the supervisor is fully licensed in the same subfields
- Otherwise, more than one supervisor is needed

General Progression of Supervision

- Progression from personal to general supervision
- Formally adopted supervision plan should document a well-defined progression of responsibility
- The QMP determines at what level a supervised individual progresses
  - Often determined by task-dependent nature of functions
  - Progress plan should be explicitly documented

Recommendations

- The supervisor **must** assume professional responsibility for the medical physics-related work done by the supervised individual.
- A supervision plan **must** be formally adopted and document well-defined progression of levels of responsibility for trainees.
- Except under documented extenuating circumstances (e.g., illness or job transition), a supervisor **must not** supervise:
    - More than two medical physics trainees at one time;
    - More than two medical physics students

Comments Received

- 76 comments received during AAPM public comment period
- Majority were editorial
- Key comments:
  - Number of individuals that a single supervisor can supervise
  - Requirements for co-signature
  - Doesn't address Medical Physicists Assistants or Physicist Extenders

Medical Physicist Assistants or Physics Extenders

- Internal review draft did include these individuals
- Based on comments received, it was determined that a separate MPPG needed to be developed to address this
- MPPG 7 has been formed to address this topic
- Work is underway and should be completed in late 2014/early 2015.

Summary

- TG members are evaluating comments
- Final draft based on consensus of committee
- MPPG Document completed soon
- Next steps: tackle the issues of physics extenders and physicist assistants in MMPG 7