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Commission on Accreditation of Medical Physics Education Programs, Inc.

Guidelines for Accreditation of Residency Education Programs in Medical Physics

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Sponsoring Organizations: American Association of Physicists in Medicine, American College of Radiology, American College of Medical Physics, Canadian College of Physicists in Medicine

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Preface

The Commission on Accreditation of Medical Physicists Educational Programs (CAMPEP) is a nonprofit organization whose objectives are the review and accreditation of educational programs in medical physics. This document describes the procedure for application to CAMPEP for accreditation of a clinical residency educational program in medical physics, a process requiring a comprehensive, unbiased evaluation. Institutions are encouraged to suggest modifications to these procedures where appropriate to improve the accreditation process.

TABLE OF CONTENTS

| | <i>Topic</i> | <i>Page Number</i> |
|---|------------------------------------|--------------------|
| 1 | ACCREDITATION | 4 |
| | 1.1 Definition and Scope | 4 |
| | 1.2 Rationale | 4 |
| 2 | EVALUATION PROCESS | 5 |
| | 2.1 Accreditation Application | 5 |
| | 2.2 Steps Involved | 6 |
| | 2.3 On Site Program Review | 7 |
| | 2.3.1 Purpose and Structure | 7 |
| | 2.3.2 Site Visit Team Composition | 7 |
| | 2.4 Action Following Evaluation | 8 |
| 3 | GUIDELINES FOR SELF-STUDY DOCUMENT | 9 |
| 4 | MAINTENANCE OF ACCREDITATION | 19 |
| | 4.1 Re-Evaluation | 19 |
| | 4.2 Action Following Re-Evaluation | 19 |
| 5 | CHECKS AND BALANCES | 20 |
| | 5.1 Appeals of Adverse Decisions | 20 |
| | 5.2 Procedures for Complaints | 20 |
| 6 | CONFIDENTIALITY OF INFORMATION | 21 |

1 ACCREDITATION

1.1 Definition and Scope

Accreditation of a hospital based medical physics residency educational training program in one of the specialties of medical physics is recognition that such a program conforms to the standards approved by the Commission on Accreditation of Medical Physics Educational Programs, Inc. (CAMPEP). These standards include appropriate levels of clinical training and educational achievement as well as appropriate evaluation criteria and complete documentation. Those who complete such a program should be qualified for professional practice in one or more of the specialties of Medical Physics.

While accrediting residency programs serves to provide uniform high quality clinical education, it does not necessarily guarantee that individuals completing the program are able to provide medical physics services with a minimum level of professional competence. Certification that an individual Medical Physicist has demonstrated a minimum level of professional knowledge is currently available from the American Board of Radiology (ABR), the American Board of Medical Physics (ABMP) and the Canadian College of Physicists in Medicine (CCPM).

CAMPEP has established guidelines for residency educational programs in each of the specialty fields of medical physics and for the evaluation of such programs by the Commission. Reasons for significant deviation from these guidelines must be satisfactorily justified by the institution requesting accreditation.

1.2 Rationale

There are a number of pathways for individuals to enter the field of Medical Physics. All of these pathways include formal undergraduate education in physics or a related science, followed by advanced studies in an appropriate graduate program. Upon completion of the M.Sc. or Ph.D. degree, several options are available for acquiring the additional experience necessary to independently practice clinical Medical Physics. An alternate pathway is to complete graduate studies in physics or a related field and complete a CAMPEP accredited clinical residency program.

Options available for clinical residency training:

- A formal 2 year residency program at an academic center offering a complete range of treatment techniques and with many, often specialized, qualified medical physicists (QMP). Such a program, if CAMPEP accredited, may serve as a primary site.
- A formal 2 year residency offered at a center with more limited resources but affiliated with a CAMPEP accredited center.
- Incorporation of a residency program in a professional degree where it may replace the research/project component of the more conventional Masters and Doctoral degrees.

Clearly to ensure the safety of patients and the quality of the care they receive, it is essential that

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

the knowledge and competence of individuals entering practice via any of these routes is not only consistent but is also of a high standard. The role of CAMPEP in the accreditation of residency programs is to provide assurance to both the entering resident and the prospective employer that a high quality, appropriate educational experience is provided at the accredited institution.

2 EVALUATION PROCESS

The CAMPEP Board of Directors is the governing body for the accreditation process. The CAMPEP Residency Education Program Review Committee (REPRC) is responsible to the CAMPEP Board of Directors for reviewing medical physics residency education programs seeking accreditation and for recommending action following the evaluation process. The CAMPEP Board reviews recommendations of the REPRC and reports to the institution all final actions by CAMPEP regarding program accreditation.

CAMPEP is always willing to discuss with chairpersons of medical physics, radiology, radiation oncology, nuclear medicine departments and other administrative officials of hospitals, clinics and medical centers all aspects of clinical training and education in Medical Physics. If requested, CAMPEP will offer suggestions and guidance to those institutions wishing to improve their clinical training and educational programs in Medical Physics.

2.1 Accreditation Application

The initial application submitted to the chair of the REPRC of CAMPEP must include the following:

Official Request for Accreditation and Evidence of Commitment

A letter from a principal administrative officer of the institution inviting CAMPEP to conduct an evaluation of the medical physics graduate education program is required. An institution's request for its program to be evaluated by CAMPEP is totally voluntary and, as such, the institution agrees to abide by the decision of the CAMPEP Board of Directors.

Hospital Accreditation

Institutions offering medical physics residency educational programs must be accredited by a nationally recognized accrediting body. Upon request from CAMPEP, the program director will submit a copy of the accreditation certificate. Ideally, the hospital should have an existing physician residency programs in those subspecialties for which medical physics residencies are to be established (e.g., diagnostic radiology, radiation oncology, and nuclear medicine). If an existing physician residency program in the appropriate subspecialty does not exist, then the clinical conferences that usually accompany these programs or their equivalent must be provided to the medical physics resident. These include, but are not limited to, new patient conferences, treatment planning conferences, morbidity and mortality conferences, and quality assurance conferences. These conferences could be provided on-site, off-site with the resident in attendance, or by some distance or remote means as long as the teaching experience is not degraded, patient confidentiality is maintained, and the attendance of the resident is documented. Opportunities for the teaching and training of physician residents, graduate students, technologists, and other allied health professionals must also be part of the program

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Commission on Accreditation of Medical Physics Education Programs, Inc.

(Sec. IV. B.)

Timing of the Application

Once the program design is complete, a self study may be submitted to CAMPEP for review. The self study will be reviewed, critiqued, and the program provided with a formal written evaluation. If the responses to this evaluation are acceptable, a site visit may be conducted to substantiate components of the submitted self study. If the outcome of the full review process is favorable, a recommendation will be made to the Board of CAMPEP that the program be granted accreditation for a limited period of time. Temporal extension of this limited accreditation status will not be granted until at least one resident has been accepted into the program and has completed at least one clinical rotation with full resident performance evaluation and documentation and a full site visit has been conducted. Institutions will be eligible for full five year accreditation once a resident has completed and graduated from the program. Progress of the program towards full accreditation will be monitored by the REPRC and yearly reports from the program will have to be submitted.

Affiliate Programs: Programs offered in centers with limited resources will be considered for CAMPEP accreditation provided they establish an appropriate relationship with a CAMPEP accredited site. An appropriate relationship here means that the residency program has been designed in such a way that the educational experience of the resident is fully equivalent to the experience they would have received at the primary CAMPEP accredited site and is fully compliant with CAMPEP standards. The level of support committed to the affiliate site by the primary site must be documented and submitted to CAMPEP by the primary site.

Professional Degree Programs: The clinical training and experience gained in a professional degree program will be assessed in an identical manner and evaluated to the same standards as those in the more conventional post graduate residency programs.

2.2 Steps Involved

Provided that the institution applying for accreditation satisfies the preliminary requirements listed above, the accreditation process involves seven steps.

1. The preparation of a self-study document by the institution applying for accreditation. The primary purpose of the self-study document is to record the operation and expectations of the program. This document is the primary vehicle for CAMPEP's evaluation of a program. In the case of Affiliate Programs, the respective roles played by the primary and affiliate institutions must be clearly specified. Secondly, the self-study document should provide the information for a program to critically evaluate itself and to produce goals for its improvement. (The self-study document is discussed in detail in Section 3 of the Guidelines. The official request and institutional accreditation documentation should be contained in the self-study document in an appendix. The demonstration of stability should be presented in the self-study document.) The self-study document shall be sent to the chair of the CAMPEP Residency Education Program Review Committee. Fully electronic submission is required to reduce handling costs and expedite distribution. The fee for accreditation is given on the CAMPEP web-site at www.campep.org. A check for that amount should be made out to CAMPEP and sent to the CAMPEP Treasurer. The review of the self study document will commence after the receipt of the application fee by the CAMPEP treasurer.

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

2. The review of the self-study document by the REPRC.
3. A formal written evaluation of the self study is communicated to the residency education program director for a response.
4. When all questions or concerns raised during the review of the self-study document have been satisfactorily answered or resolved, a site visit may be scheduled. If the self study is submitted and evaluated prior to accepting residents into the program a site visit will be conducted at CAMPEP's discretion. However, site visits are always scheduled for first time applicant institutions once the program is running and residents have completed at least one clinical rotation. A site visit may be deemed by CAMPEP to be unnecessary for institutions being re-evaluated. In all cases, primary institutions applying for reaccreditation will be visited, at the least, on alternate applications for reaccreditation (i.e., at least once every ten years).
5. Professional Programs will receive an expanded site visit encompassing both the graduate and resident components of the program.
6. Immediately following a site visit, the CAMPEP site visit team submits a summary with appropriate recommendations to the REPRC. Following REPRC review, the REPRC Chair forwards the appropriate recommendation on accreditation to the CAMPEP Board.
7. The resulting recommendation of the CAMPEP Board of Directors is communicated to the applicant institution.

2.3 On-Site Program Review

2.3.1 Purpose and Structure

Provided the self-study document and the program director's response are found to be consistent with the Guidelines, a site visit is always scheduled for first time application primary institutions. Institutions applying for reaccreditation will be visited at least once in any ten year period. The site visit requires one or two days during a regular institutional period. The dates are scheduled so that they are mutually convenient to the site visit team and the residency education program director. A time is selected that will permit the members of the site visit team to meet with one or more of the principal administrative officials of the institution, the medical and scientific faculty, and the residents.

The purpose of the site visit is to examine selected areas of the program identified in the self-study document review where questions may exist; to meet and talk personally with scientific and medical faculty members, residents, and administrative officials; to verify the adequacy of facilities; to assess the aptitude and commitment of residents and faculty; to observe the general educational and scientific environment at the institution; and to obtain any additional data that CAMPEP needs for its evaluation.

The site visit team should be provided with a list of the records generated by the residency educational program including, but not limited to, databases, application records, and transcripts. For each set of records, the list shall include the description, location, method of access, time to access, and duration that records are stored. Any records to which the site-visit team has legal access should be available for review at their request. Also available for review to the site-visit team should be project and other reports produced by the program, and the evaluations of and by residents for the current and preceding academic year.

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2.3.2 Site Review Team Composition

The site review team is generally composed of two or more members of the CAMPEP Residency Educational Program Review Committee. The members are experienced educators, physicians and scientists thoroughly familiar with CAMPEP's criteria and knowledgeable about both administrative and technical aspects of conducting successful programs. In the selection of members of the site review team for a particular on-site evaluation visit, every effort is made to eliminate any conflict of interest or bias. For instance, a graduate of the institution under evaluation, or a person having a close and continuing relationship with the institution, would not be chosen to assist in the visit and evaluation. Neither would one be selected who is a faculty member at an institution in the same immediate geographical area nor from one having any substantial number of its graduates on the faculty at the institution being evaluated.

For Professional Programs the site review team will comprise members of both the Residency and Graduate Education Program Review Committees.

2.4 Action Following Evaluation

The possible actions by CAMPEP after an evaluation are as follows:

Accreditation: Accreditation for a period of 5 years, expiring on the 31st of December of the fifth year after the date accreditation is approved. This level of accreditation is awarded to an applicant program that is in substantial compliance with CAMPEP standards.

Accreditation limited to a period of less than 5 years with an interim report or reports required over some specified period. This action is appropriate for programs that have either yet to admit their first resident, have yet to graduate their first resident or that are found to be in overall partial compliance with CAMPEP standards for accreditation. The period of accreditation will be reviewed as the program moves through its development towards substantial compliance with CAMPEP standards which requires graduating residents. Failure to progress towards compliance with CAMPEP standards may result in the withdrawal of accreditation.

Accreditation Deferred: This action may be appropriate for programs that are found be non-compliant to CAMPEP standards for accreditation to allow an adequate period of time for the institution to implement planned or suggested improvements in the program. This action postpones a final decision until specific additional information is provided which brings the program into compliance with CAMPEP standards.

Accreditation Withheld: This action is appropriate for programs that are found be non-compliant to CAMPEP standards for accreditation, nor does it appear that program changes could be achieved within a reasonable period of time to qualify for accreditation. After this decision, should accreditation be pursued, a new application shall be required including the appropriate fee.

Additional categories of accreditation may be granted under exceptional circumstances at the discretion of the CAMPEP Board.

Upon accreditation, CAMPEP will provide a certificate of accreditation for the program. The name of the institution and program will appear on the list of medical institutions whose programs have

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

been accredited by CAMPEP. This list appears on the CAMPEP website, www.campep.org.

3 GUIDELINES FOR THE SELF-STUDY DOCUMENT

| Topic | Page Number |
|---|-------------|
| I Program Goal and Objectives | 10 |
| II Program Evolution and History | 10 |
| III Program Structure and Governance | 10 |
| IV Training Requirements | 11 |
| A Requirements for Successful Program Completion | 11 |
| B Design and Content | 11 |
| C Sample Training Plans | 12 |
| D Evaluation of the Curriculum | 12 |
| V Residents | 13 |
| A Admissions | 13 |
| B Recruitment Efforts | 14 |
| C Enrollment | 14 |
| D Evaluation of Resident Progress | 14 |
| E New Resident Orientation | 14 |
| F Safety | 15 |
| VI Program Administration | 15 |
| A Structure within the Hospital or Medical Center | 15 |
| B Role of the Program Director | 15 |
| C Committees and Meetings | 16 |
| D Records Available for Review | 16 |
| VII Resources | 16 |
| A Staff | 16 |
| B Finances | 17 |
| C Facility | 17 |
| VIII Future Plans | 18 |
| A Summary of Strengths and Needs | 18 |
| B Further Developments and Improvements | 18 |

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

I Program Goal and Objectives

To be accredited by CAMPEP, the medical physics residency program's objective shall be clinical training and education in one of the three main specialties of medical physics, i.e. medical physics of diagnostic imaging, radiation oncology, or nuclear medicine. The primary focus of the resident's experience shall be clinical training and educational activities. The principal goal of the physics residency program is to prepare an individual to practice independently a medical physics specialty.

II Program Evolution and History

A brief history of the program's evolution including faculty, staff, and residents should be presented. Proper training can best occur in a stable and supportive environment. Moreover, program development will produce an evolution in the depth and breadth of training. If an institution is preparing a self-study document in maintenance of its accreditation, significant changes in the program since the previous self-study document should be noted here and described in more detail in the appropriate section of the self-study document.

III Program Structure and Governance

The accreditation review will assess the stability and continuity of the organizational structure within which the training program is conducted. The self-study document should delineate relationships to other programs, particularly other academic and training programs, which serve to provide trainees with the necessary knowledge and broad understanding of the fundamentals of medical physics. The relationship to clinically oriented programs, such as residency training programs for physicians, should be described.

The position of the medical physics residency program within the organizational chart of an institution shall be clearly defined along with the source of authority for the program within the structure of the institution. The status of the staff members in the program, the procedure for granting certificates, the training curriculum essentials, program review process, and the mechanism of recruitment and admissions of medical physics residents should be described clearly. The mechanism of access to clinical facilities and equipment shall be described. Any collaborative arrangements among departments and institutions shall be specified. If multiple departments and/or institutions participate in the program, the role and commitment of each shall be explained with a description of a strategy to maintain a uniform quality of education at the multiple institutions.

Programs located in settings that do not include all appropriate clinical services and facilities shall have arrangements with other facilities where the required clinical training can be provided. In the case of Affiliate Programs, arrangements must be in place to access the clinical programs and expertise of a primary CAMPEP accredited site. Documentation of such collaborative arrangements or support shall be supplied.

The program, whether at a primary site or an affiliated site, shall be headed by a program director

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

responsible for coordinating the faculty, recruiting and advising the residents, and evaluating and promoting the program. The position of the program director in the academic and clinical organization is of key importance and must be explained, together with the relationship of the key director to other participating individuals, groups, and organizations. The process by which the program director is chosen should be noted.

IV Training Requirements

A Requirements for successful program completion

The self-study document shall include written expectations of resident performance and behavior as well as the training schedule that is given to incoming residents. This training schedule should include dates of each clinical rotation, clinical rotation objectives, didactic educational expectations, optional research opportunities (which must not compromise the two years of clinical training), etc. Information must be provided that states clearly the pass/fail criteria for these rotations. The self-study document must describe clearly what will be done and when if the resident fails to meet the expected level of performance.

The length of the residency education program shall be at least twenty-four months for those entering with didactic training in medical physics as evidenced by graduation from an accredited medical physics graduate education program. The didactic background of individuals entering a CAMPEP accredited residency program shall be equivalent to that obtained in a CAMPEP accredited graduate program. For entering residents who have not graduated from an accredited medical physics graduate education program or equivalent, appropriate didactic training must be provided and successfully completed without compromising the two years of clinical training. If more than one class per semester is required to meet the didactic background requirement, the residency will have to be extended so that the resident can meet the above stated didactic requirements. The means by which academic remediation is accomplished without compromising the two years full time equivalent of clinical training must be clearly stated. The classes that need to be taken to meet these requirements must be clearly defined for each resident at the beginning of their resident experience. These classes must be at the graduate level and sufficient to meet the requirements of AAPM Report #79. Classes for which the target audience comprises medical residents and/or technologists/therapists are not deemed to be at an adequate level. In the event that graduate level classes in medical physics are not available locally, remediation may take the form of tutorials and evaluations conducted by Board certified physicists. All remedial activities must be thoroughly documented. The pass/fail criteria need to be clearly defined together with the required action that will be taken if these expectations are not met. Likewise, if research is an expectation of the resident this must be conducted in addition to the two years of clinical training. Relevant and documented clinical training obtained prior to entry into the residency program may be used to shorten the training period. In such cases, thorough documentation by the program director will be required to justify such a decision.

B Design and Content

The elements of clinical training should be consistent with recommendations

C A M P E P

Commission on Accreditation of Medical Physics Education Programs, Inc.

presented in AAPM Report Number 90, "Essentials and Guidelines for Hospital-Based Medical Physics Residency Training Programs." While strict adherence to these recommendations is not absolutely necessary, programs will be evaluated with regard to the intent of fulfilling the AAPM recommendations. The self-study document should describe the clinical training rotations including the detailed training objectives and the tools by which attainment of training objectives shall be evaluated. Listed in the self-study document should be the clinical conferences, seminars, and/or journal reviews, including their frequency that the resident is expected to attend. Mandatory attendance at some fraction of these conferences is expected. A schedule of a past year's conferences and seminars including documentation of resident attendance shall be included as an attachment. The self-study document should describe what action will be taken if the resident fails to attend the indicated percentage of conferences. The self-study document should describe the resident's training in the teaching of medical physics to physician residents, graduate students, technologists, and other allied health professionals. In-service presentations on radiation safety topics, implementation of new or other clinical subjects can also be used to provide this training.

Education on the professional aspects of the medical physics profession should take place. Professional subjects include: medical-legal considerations, ethics, the various societies associated with medical physics and their roles (AAPM, CAMPEP, ASTRO, RSNA, etc), and interactions between medical physicists and state/provincial and federal government agencies. This education may take place in a mentoring environment, but must be documented as having occurred.

Residents can reasonably be expected to contribute to the routine clinical support activities of the Department. Here, "routine clinical support activities" refers to those activities that, in the absence of a resident, would be performed by a clinical physicist, physics assistant or dosimetrist. The time commitment of such routine activities should be estimated and must not be such that it detracts from the educational experience of the resident.

C *Sample Training Plans*

The self-study document shall include, in an attachment, a summary of the elements of clinical training of each clinical rotation. These summaries shall include:

1. The documentation of specific training objectives and experience to be gained by the resident during each rotation;
2. The documentation of resident progress evaluation. Actual rotation evaluation forms for several clinical training rotations, with the name of the resident removed, shall be included;
3. The documentation of didactic education, or courses of self-study, used to satisfy didactic training requirements, shall be provided as an attachment.

This shall include:

- i) Type of educational experience – lectures, self-study, homework assignment, lecture preparation, etc.

C A M P E P

Commission on Accreditation of Medical Physics Education Programs, Inc.

- ii) Subject material, instructors, and number of contact hours;
- iii) Number of contact hours per week and time of offering;
- iv) List of texts, journal articles, and other materials;
- v) Detailed outline of course indicating time allocation to topics;
- vi) If a laboratory is included, description of its content; and
- vii) Documentation of resident performance evaluation – informal review, written examination, oral examination, etc.

For courses of self-study, the same reporting format shall be used. Include homework assignments, reports of student/instructor contact hours, and examination results. Resident training records should include examples of work assignments, reports, and examinations. Copies of supervising physicist evaluations of clinical rotations shall be kept. These records shall be available for review at the time of the site visit.

The self-study document shall include written expectations of resident performance and behavior as well as the training schedule that is given to incoming residents. This training schedule should include dates of each clinical rotation, clinical rotation objectives, didactic educational expectations, optional research opportunities, etc. Information must be provided that states clearly the pass/fail criteria for these rotations. The self-study document must describe clearly what will be done and when if the resident fails to meet the expected level of performance.

Programs at affiliated sites must clearly describe which components are provided by the primary sites and which are available locally.

D Evaluation of the Curriculum

The process for creating or modifying training objectives shall be described. The method for evaluating clinical rotations by both the residents and the staff shall be discussed, including the frequency of evaluation and the mechanism for corrective actions. Documentation of these evaluations is required as well as the process and procedure for implementing modifications to the program. The resident should be informed at the beginning of their residency period that program alterations and enhancements may be made but that they will be informed officially of these changes, especially if new completion requirements are included.

V Residents

A Admissions

Prospective residents should be provided with an application packet that contains information necessary to make a decision regarding whether to apply, how to apply, and what to expect during the application process. Information explaining the field of medical physics and residency training should be included, e.g., documents such as (1) AAPM's "The Medical Physicist", (2) AAPM's "The Roles, Responsibilities, and Status of the Clinical Medical Physicist," and (3) AAPM Report No. 90, "Essentials and Guidelines for Hospital-Based Medical Physics Training Programs," which are available from AAPM headquarters.

C A M P E P

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There should be a description of the medical physics residency education program. Admission standards concerning degrees, graduate transcripts, etc., for incoming residents should be clearly stated.

Residents entering a medical physics residency program shall have acquired a strong foundation in basic physics. This shall be documented by a master's or doctoral degree in medical physics, physics, engineering, mathematics, or other science with physics training equivalent to a minor in physics (e.g., upper level courses in mechanics, electricity and magnetism, quantum mechanics, atomic structure, nuclear physics, and statistical mechanics).

Residents entering a medical physics residency program shall have acquired a strong didactic background in medical physics as described in AAPM Report Number 79, "Academic Program Recommendations for Graduate Degrees in Medical Physics.." This could be demonstrated by (1) graduation from an accredited medical physics graduate education program, or (2) transcripts from an unaccredited medical physics graduate education program. Residents entering the program who have a deficiency in medical physics education must remedy this deficiency during their time in the residency program without compromising the two years of clinical training required of an accredited program. In this case the program will (1) provide a mechanism by which the resident will receive this didactic training, while maintaining two full years of clinical training and (2) have a mechanism to evaluate whether the candidate has successfully completed the didactic training prior to program completion. These two mechanisms shall be clearly stated. If attendance at lectures of accredited graduate medical physics courses is not practical, an alternative didactic training pathway shall be identified and documented. Courses primarily aimed at medical residents, technologists, therapists and/or dosimetrists are deemed insufficient to achieve the necessary academic level. Educational objectives shall be listed along with methods of assessing academic achievement. Formal documentation such as homework assignments and examination results will be demonstrated.

The method of processing a resident application shall be described. It should include the evaluation process and the method of informing residents of action taken on their application. Application due dates and an admission process timeline should be specified. Documentation of current applications and admissions should be available for review.

Admission policies shall be nondiscriminatory except as related to standards for successful performance in the program. The quality of the entering residents shall be such that successful completion of the required training is not precluded by inadequate qualifications upon admission. The general aptitude and qualifications of entering residents will be considered in the accreditation evaluation. The self-study document shall provide information about the residents admitted to the program for the previous 5 years (or as long as the program has been in existence if less than 5 years). It should include graduate degrees (graduate name, university, year, and degree), transcripts containing grade point averages, letters of recommendation, and other information used in evaluating candidates. Admissions records should be available for the site visit.

B Recruitment Efforts

Each program shall have active recruitment efforts. Examples of this could be listings

C A M P E P

Commission on Accreditation of Medical Physics Education Programs, Inc.

in the relevant physics and radiology journals and contacts with nearby university medical physics and physics departments. Emphasis should be placed on attracting applicants with the appropriate didactic background in medical physics. Recruitment efforts shall be discussed in the document.

C Enrollment

Program capacity shall be clearly stated. A list and status of all residents in the program at the beginning of the training year immediately prior to the self-study document shall be provided. This shall include date of entry into program, assigned rotations and staff supervisors, and source of funding.

D Evaluation of Resident Progress

Performance requirements for the resident shall be those in effect at the time the resident enters the program. The methods for evaluating resident progress shall be stated. This will include meetings with the program director and/or staff committees and should follow each clinical rotation. Sufficient guidance shall be given to ensure the residents complete all program requirements within expected time allotments. Arrangements for assisting the failing resident should be in place. Institutional disciplinary procedures for failing residents should be explained to the resident at the beginning of the program and should be stated clearly in the self-study document.

E New Resident Orientation

It is important that new residents receive proper orientation upon entry into the program and the self-study document shall include a description of the orientation process. The incoming resident should clearly understand the program's requirements, resident administrative procedures, all training expectations, and all behavioral expectations. The resident should be aware of staff and program resources, laboratories, research opportunities, and funding. In general, the resident should have a good overview of the program. Of particular importance is that the resident understands all health hazards, including radiation, associated with the practice of the medical physics specialty.

F Safety

Residents will be working in a radiation and high-voltage environment, where the potential exists for bodily injury to themselves and others. They could also be exposed to chemicals or biohazardous materials. Entering residents should be made sufficiently aware of potential hazards so that they will not be in any immediate danger. The program should have introductory safety training in radiation protection and should provide the resident with his/her own radiation exposure monitor in compliance with state and federal regulations. It should also provide introductory training in the dangers of high voltage. The program should have a published set of guidelines and restrictions for using potentially dangerous equipment or materials. The self-study document shall describe the program's safety training activity. Basic safety training shall be included in the resident orientation program.

VI Program Administration

A Structure within the Hospital or Medical Center

C A M P E P

Commission on Accreditation of Medical Physics Education Programs, Inc.

The structure of the program shall be defined. The programs may consist of multiple institutions and departments bound together by the common thread of the medical physics residency education program. For a single-institution applicant, the roles of the program director, the medical director, the residency steering committee, and any appropriate institutional committees should be stated. For programs that consist of multiple institutions and departments, the role and commitment of each component institution and department shall be explained. In particular the roles and responsibilities of individuals in each participating institution as regards the residency program shall be specified.

B Role of the Program Director

The program shall be headed by a program director responsible for coordinating the staff, advising the residents, and evaluating and promoting the program. The position of the program director in the clinical organization is of key importance; it must be explained and documented, together with the relationship of the program director to other participating individuals, groups, and organizations. The program director shall be board certified in the area of the program and have seven years clinical experience in the area of medical physics of the training program. Time spent in clinical practice in an accredited medical physics residency program can be counted as part of this requirement for seven years of clinical experience. Assistant directors are allowed but their duties and responsibilities must be clearly defined to avoid confusion within the program for the residents and the institution.

Affiliate and professional degree residency programs require an individual to be identified who takes overall responsibility for the resident(s) in the program and, in particular, responsibility for ensuring that all training requirements are met.

C Committees and Meetings

Communication among the staff is key in any program. The various staff meetings and administrative committees that administer the Medical Physics Residency Education Program should be listed and their exact functions defined. The Medical Physics Residency Education Review Committee should meet on a regular basis to assess the quality of the program review, the overall performance of the current residents, and to make and discuss any changes required by the program. Minutes of all meetings should be complete and available for review.

D Records Available for Review

A list of records of information generated by the medical physics residency education program shall be available. These records shall include the following:

1. Medical Physics Residency Education committee minutes
 - i) for administrative activities
 - ii) applicant selection activities
 - iii) oral examination activities and results
2. Resident applications
 - i) application forms
 - ii) transcripts

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Commission on Accreditation of Medical Physics Education Programs, Inc.

- iii) candidate interview evaluations
- iv) assessment of required didactic remediation

3. Residents

- i) training schedules
- ii) rotation objectives and expectations
- iii) rotation evaluations
- iv) examination results
- v) oral examination evaluations
- vi) didactic remediation
- vii) research expectations (if any)
- viii) routine clinical activities

For each set of records, the list shall include the description, location, method of access, time to access, and duration that records are stored. Any records to which the site-visit team has legal access should be available at their request. Affiliate programs must also maintain records of educational and training activities which take place at the primary CAMPEP accredited site.

VII Resources

A Staff

The professional expertise of the staff shall be documented. Responsibilities of the staff for clinical training in a preceptor arrangement must be identified. The interaction of staff members with the residents shall be described. In particular, the ability of the staff to provide effective, individualized guidance to the residents and to help with their training and preparation for a professional career will be assessed as part of the accreditation procedure. Also, the degree of interaction and cooperation among staff members in forming a cohesive training program will be examined.

Since certification in an appropriate specialty by a recognized board is an important clinical credential, the majority of the clinical medical physics staff members should be board certified in the area of the program.

The staff physicist-to-resident ratio shall be presented and projected for the immediate future. This must include the necessary data for a primary site where an application is being made by an affiliated program. The time commitment of staff to resident training shall be specified.

As an attachment provide a list of professional and other supporting staff categorized by primary areas of specialty in medical physics. For each staff member state their rank or title, institution, department, years as a member of the hospital staff, certification(s), and percent of effort committed to clinical service, teaching, research, and other program activities. For affiliate programs, details of staff at the primary site should be included.

B Finances

The primary financial resource required to run a successful residency education

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Commission on Accreditation of Medical Physics Education Programs, Inc.

program is resident funding. The goal of any clinical training program should be to fund its residents 100% of the time at a level typical of other clinical resident stipends. In any case, the resident shall participate full-time in the program. The self-study document shall describe the funding source(s) used to finance residents. The levels of resident funding, including any benefits (e.g., insurance, tuition, books, etc.), shall be identified. For affiliate programs the financial resources and time allocated to permit the resident to access the resources of the primary site must be specified.

C Facility

The self-study document shall list by category all facilities used by the residents. Their location, availability, and capacity shall be indicated. Further details should demonstrate conformity with the guidelines.

Since radiation oncology physicists are closely involved in specific patient procedures, the institution must perform a minimum number of clinical procedures including several core special procedures. These are as follows: photon and electron external beam procedures, intracavitary and interstitial brachytherapy, total body irradiation, total skin electron treatment, intensity modulated radiation therapy, stereotactic radiosurgery, radiopharmaceutical therapy, and interstitial seed implant procedures. If a minimum number of core procedures is not performed at the main clinical facility, arrangements should be made for the resident to obtain this training at another facility. As developing procedures become routine in the clinic they should be included in the resident's training.

Resident offices should be available. Office space should include an assigned space to sit. Resident offices should be located in or near clinical facilities utilized by the resident. Residents should have access to adequate office supplies, copying equipment, and networked computers.

Conference or classrooms having adequate capacity should be easily accessible for resident teaching. They should meet modern standards of lighting, ventilation, and comfort, and be equipped with adequate visual aids (blackboard, overhead projector, slide projector, television, and video projection equipment).

The program shall have adequate clinical facilities to meet its objectives. Procedures should be in place 1) to allow the resident reasonable access time to clinical equipment, 2) to provide residents sufficient training and technical support to ensure safe and proper use of equipment, and 3) to ensure equipment is left in the proper state for clinical use.

Teaching and research laboratories accessible to the residents shall be listed. These laboratories should be sufficient for the training goals of the program. Laboratories should have recent models of instruments and equipment available to the residents. Clinical equipment available for training should be indicated. Machine and electronic shops should be accessible, and there should be provisions for maintenance and prompt repair of laboratory equipment and instruments used by the residents.

The institution should have a library with holdings related to the size and nature of the program and the research activities of staff and residents.

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

VIII Future Plans

A Summary of Strengths and Needs

The program review shall conclude with a summary of the program's strengths and needs as perceived by the program staff. The program may receive additional feedback of this type from CAMPEP as part of the evaluation.

B Further Development and Improvements

Based on its objectives, the program shall produce a set of goals which, if achieved, would improve the program by capitalizing on its strengths and addressing its needs. The program may receive additional guidance in the form of recommendations for development from CAMPEP as part of its evaluation.

4 MAINTENANCE OF ACCREDITATION

4.1 Re-evaluation

The program director shall submit an annual report discussing the status of the resident training, current residents, number of applicants, and any changes in the staffing or administration of the program. If new clinical programs or major equipment changes are made, a description of how these new capabilities will be incorporated into the residency program shall be described.

Full re-evaluations of programs at accredited institutions are scheduled at five-year intervals but more frequent re-evaluations may occur in the event of significant program changes. A re-evaluation consists of a new self-study document by the institution of its medical physics residency education program and a report to CAMPEP of the results. The re-accreditation application will be submitted to the chair of the REPRC of CAMPEP, following a letter from the chair six months in advance of the initial accreditation expiration date.

If the results of an institution's self-study document as well as other information available to CAMPEP about the program indicate clearly that it continues to meet the criteria of CAMPEP and remains healthy and vigorous, no site visit is required. Otherwise, a site visit is included as part of the reevaluation. A site visit is also arranged if requested by an institution.

4.2 Action Following a Reevaluation

One of the following types of CAMPEP action is taken following the completion of a reevaluation:

Accreditation Continued, Probation, Accreditation Withdrawn

Accreditation Continued: When the decision of CAMPEP is for continued accreditation, the chief administrative officer of the institution and the program director are so advised in a letter that includes whatever suggestions and recommendations CAMPEP might deem appropriate to promote the continued strength and vitality of the program.

Probation and Accreditation Withdrawn: If CAMPEP contemplates placing a residency program

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

on probation or withdrawing accreditation following a reevaluation, the reasons are summarized in a letter to the program director and the chief administrative officer of the institution. CAMPEP invites any additional information that the institution might wish to provide or any corrections in what was reported about the program. This additional information is then reviewed by CAMPEP at its next regular meeting before it takes any official action.

A program is placed on probationary status prior to any decision to withdraw accreditation. Probationary status results whenever significant changes have occurred in the medical physics staff and/or program that in the judgment of CAMPEP might prevent the institution from offering a residency program that meets CAMPEP's criteria. Examples of such changes are crucial reductions in staff size, in the quality and distribution of staff capability, in clinical training facilities or opportunities, in required medical physics training hours, and in budgetary support. Every effort is made first by CAMPEP to encourage and assist the institution to strengthen its program in deficient areas, and a period of time -- usually not to exceed 12 months -- is allowed for the institution to correct the deficiencies and to bring the program back into compliance with the criteria.

If compliance is not achieved within a prescribed period, a complete reevaluation of the Program, including a site visit, is required unless the chief administrative officer of the institution indicates to CAMPEP that the institution is no longer in a position to offer a program that meets CAMPEP's criteria and prefers, under the circumstances, not to proceed with the reevaluation. In such cases, accreditation of the program is withdrawn. Accreditation is also withdrawn if, upon completion of the site visit and full reevaluation, it is clearly evident that the Program does not meet CAMPEP's criteria and the institution is unable to assure CAMPEP of its ability to correct program deficiencies within the next year.

5 CHECKS AND BALANCES

5.1 Appeals of Adverse Evaluation Decisions

An adverse evaluation decision by CAMPEP is defined as placement on probationary status or the withdrawal or denial of accreditation. An institution may petition for review of an adverse decision if it believes that CAMPEP has not adhered to its own established policies and procedures or has failed to consider all of the evidence and documentation presented during the evaluation. The petition should be addressed to the President of CAMPEP and must be sent within 30 days following the date of the letter advising the institution of the adverse decision. Moreover, within 60 days of the latter date, the institution must provide whatever additional information and documents it wishes to present in support of the petition.

Upon receipt of a petition and supporting information, CAMPEP will review the matter at its next regular Board meeting, which will include a conference with representatives of the institution if it is desired by the institution or CAMPEP. After the meeting, CAMPEP will report its findings to the institution.

5.2 Procedures for Complaints

Any department chairman, staff member, resident, administrative official of an institution, or

CAMPEP

Commission on Accreditation of Medical Physics Education Programs, Inc.

other person who disagrees with the policies, procedures, or activities of CAMPEP and wishes to present a complaint should do so in a letter to the President of CAMPEP with appropriate documentation. The same procedure is to be followed should the complaint allege failure of an accredited institution to adhere to CAMPEP's criteria or allege that there is a situation tending to jeopardize the quality and vitality of a program at an accredited institution. It will then be the responsibility of CAMPEP to investigate the matter and to advise the complainant of CAMPEP's conclusions not later than 30 days following CAMPEP's next regularly scheduled meeting.

6 CONFIDENTIALITY OF INFORMATION

Institutions requesting the cooperation of CAMPEP for the evaluation of their programs of residency education in medical physics are expected to provide CAMPEP with detailed information pertinent to the programs. Institutions on the accredited list of CAMPEP are obligated to do so periodically as one of the conditions for continued accreditation. The information provided and all related discussion and correspondence between CAMPEP and an institution are solely for the confidential use of CAMPEP. In the event an institution appeals a CAMPEP decision, CAMPEP may use an ad-hoc appeals committee. In this case CAMPEP would request permission from the institution to release necessary information.

In its annual published reports CAMPEP identifies those institutions whose programs are currently accredited. These annual reports also summarize statistical information provided by each institution about its medical physics residency education program graduates. Otherwise, CAMPEP does not release information about a particular program or evaluation.