Residency Programs & Accreditation

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Goals

• Purpose of the Residency Education Program Review Committee (REPRC)
• Understand the accreditation process
• Residency Standards
• Requirements for maintenance of accreditation
Presentation Outline

1. Purpose of the Residency Education Program Review Committee (REPRC)
2. Accreditation process
3. Residency entrance requirements
4. Residency programs & statistics
5. Match update
Relative roles of SDAMPP, AAPM, CAMPEP, and ABR for the Education of Medical Physicists in the United States

AAPM
Definition
What is medical physics?

SDAMPP
Implementation
How best to educate?

ABR
Certification
Individual certified to practice?

CAMPEP
Accreditation
Program accredited to educate?
CAMPEP Composition:

1. Graduate Education Program Review Committee (GEPRC)-accredits graduate programs
2. Residency Education Program Review Committee (REPRC)-accredits residency programs
3. Continuing Education Committee
4. CAMPEP Board of Directors
Purpose of the REPRC

That section of CAMPEP that is responsible for the accreditation and reaccreditation of residency programs in medical physics
2014 INITIATIVE

To sit for the ABR board examination in 2014 and beyond, applicants must have graduated from a CAMPEP accredited residency program.
Appropriate didactic preparation for entry into a CAMPEP – accredited residency in North America may be demonstrated in one of three ways:

a. Graduating from a CAMPEP-accredited graduate program

b. Completion of a CAMPEP-accredited Certificate program – this pathway is only available for graduates with a PhD in Physics or a closely related field (17)

c. Alternate pathway for PhD in physics or closely related field
Individual consideration for graduates with a Ph.D. in physics or closely related field

Required to take 6 core courses:
1. Anatomy and physiology
2. Radiation therapy physics
3. Imaging physics
4. Radiological physics and dosimetry
5. Radiation biology
6. Radiation safety and shielding

Core courses taken outside of a CAMPEP-accredited graduate program:
1. Can be evaluated for their equivalence by the GEPRC for $250/course
2. Can be evaluated by the residency program director for their equivalence- this must be documented and could jeopardize the program’s accreditation if courses are found to be non-equivalent during a program review
Accreditation Process

1. Institution submits fee & self-study for review
2. Consistent with Residency Standards
3. Reviewed by volunteer program directors
4. Site visit
5. Evaluation and Self-Study submitted to REPRC for vote
6. Evaluation and Self-Study submitted to CAMPEP BOARD
Residency Program in Medical Physics

Institution

Self Study

Date

Program Director

Name

Address

Telephone Number

Email Address

Program Website URL

Template Revised July 2014
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Standards for Accreditation of Residency Educational Programs in Medical Physics

Revised March 2015

Preamble

Medical Physics is a branch of physics that applies the concepts and principles of physics to the diagnosis and treatment of human diseases. Medical Physics encompasses four fields: Imaging Physics, Nuclear Medicine Physics, Radiation Oncology Physics and Medical Health Physics. This document focuses on the essential educational and experience requirements needed to engage in medical physics research and development, and to enter a residency program in preparation for clinical practice of one of the first three fields.

Terms such as “shall”, “must”, “require”, “should”, “may” and “recommend” are frequently used in these standards. The terms “shall”, “must”, and “require” denote items or activities that CAMPEP believes are mandatory components of an educational program. That is, they are required components. The terms “should”, “may” and “recommend” are considered desirable but not essential components of an educational program.
Residency Standards

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1. Program Goal and Objectives

The objective of a residency educational program in medical physics is to instill into its graduates a level of competency sufficient to engage in independent clinical practice in a specified field of medical physics. The knowledge and skills that the resident should attain during residency education include:

1.1. The technical knowledge and skills related to the sophisticated technologies used in the practice of medical physics;
1.2. A critical awareness and evaluation of research and scholarship in the field;
1.3. An understanding of the protocols and practices essential to the deployment of technologies to detect, diagnose and treat various illnesses and injuries;
1.4. The ability to use analytical and research methods to solve problems arising in the clinical environment;
1.5. The professional attributes and the ethical conduct and actions that are required of medical physicists;
1.6. The communication and interpersonal skills that are necessary to function in a collaborative environment;
1.7. An awareness of the complexity of knowledge in the field and a receptiveness to other interpretations, new knowledge, and different approaches to solving problems;
1.8. An awareness of the need for confidentiality of patient information and familiarity with relevant regulations;
1.9. An appreciation of the clinical purpose and applications of sophisticated technologies;
1.10. The acknowledgement of the role of medical physicists in a clinical environment in which physicians, nurses, technologists and others work in cooperation;
1.11. The sensitivity to potential hazards that residents may encounter and appropriate measures to take to prevent risks to themselves and equipment;
1.12. The recognition and correction of suboptimal application or unsafe use of technologies;
1.13. The commitment to continued education so that practice knowledge and skills remain current.
Program Evaluation

Residency Program: *******

Program Director: **********

Reviewers: #1, #2, #3, Physician

Date of Site Visit: To be scheduled following response from institution

Date of Evaluation: 6/15/15

Notes:
This report makes reference to the Self-Study document submitted as part of this review process and which contains full details of the program.

1. **Compliance** refers to CAMPEP published standards

2. **Observations** are general comments related to performance of the program within the context of the appropriate CAMPEP standards.

3. **Requirements** are conditions that must be met by the program as part of the accreditation process. **The responses to the requirements shall be provided in your next annual report submitted to CAMPEP.**

4. **Recommendations** are suggestions by the program reviewers that are offered as improvements in the program but that are not requirements for accreditation. **The response to recommendations shall be provided in your next annual report.**

5. **Clarifications** are issues raised by the reviewers that require additional information from the institution.
Summary

Compliance

<table>
<thead>
<tr>
<th></th>
<th>Substantial</th>
<th>Partial</th>
<th>Non Compliant</th>
</tr>
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<tbody>
<tr>
<td>1. Program Goal and Objectives</td>
<td>☒</td>
<td></td>
<td></td>
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<tr>
<td>2. Program Structure and Governance</td>
<td></td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>3. Program Director</td>
<td>☒</td>
<td></td>
<td></td>
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<tr>
<td>4. Program Staff</td>
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<td>☒</td>
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<tr>
<td>5. Institutional Support</td>
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<td>☒</td>
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<tr>
<td>6. Educational Environment</td>
<td>☒</td>
<td></td>
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<tr>
<td>7. Scholarly Activities</td>
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<td>☒</td>
<td></td>
</tr>
<tr>
<td>8. Training Requirements</td>
<td></td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>9. Residents</td>
<td></td>
<td></td>
<td>☒</td>
</tr>
<tr>
<td>10. Future Plans</td>
<td></td>
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</table>

Recommendations

The program review team recommends accreditation for a ___-year period ending 31 December 20___.

Requirements:

1. Steering committee shall meet twice per year (Standard 2.6)
2. Public website shall be available providing information on the residents (Standard 2.11)
3. Procedure for resident feedback must be provided (Standards 6.5 & 6.6)
4. Program director must meet periodically with the resident (Standard 3.8)

Public Disclosure Posting: Items 1 through 4 listed in the requirements are subject to public disclosure on the CAMPEP website.

Summary of Specific Recommendations:

1. Consider making available a separate computer for the residents.
2. Provide some teaching opportunities for the resident
3. CVs provide for all personnel involved in the resident’s training
**Full Accreditation:** Programs that are granted initial accreditation will be accredited for a period of three (3) years. If programs submit acceptable annual reports during the first three (3) years of accreditation, the accreditation will be extended to five (5) years on the recommendation of the REPRC and approval by the Board. This level of accreditation is awarded to an applicant that is in substantial compliance with CAMPEP standards.

**Provisional Accreditation:** New educational programs that have yet to graduate one resident may be granted provisional accreditation for a period less than three years. If a residency program has not yet admitted its first resident, provisional accreditation will be for a period until the first resident has completed the first year of study, at which time a full site visit will determine if accreditation should be extended for an initial period of three years, with the opportunity to extend an additional two years as described in E.06.01. If the residency program has undergone a full site visit prior to provisional accreditation, then initial three-year accreditation, extendable for an additional two years, will be granted upon graduation of its first resident or demonstration of compliance with CAMPEP standards for accreditation. These programs are required to provide evidence of graduation of their first resident or remediation as appropriate in which case Initial Accreditation will be granted.

**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 not 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.
6. Educational Environment

<table>
<thead>
<tr>
<th>Standard</th>
<th>Compliance</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.1 A residency program shall be situated in an environment that encourages open communication and facilitates the exchange of knowledge, experience and ideas. The existence of other educational programs for physicians, technologists, etc. helps foster a productive educational environment;</td>
<td>F</td>
<td>Residents are encouraged to attend local and national meetings, but they are not reimbursed for their attendance.</td>
</tr>
<tr>
<td>6.2 Conferences, journal clubs, and teaching rounds shall include residents, and residents should be encouraged to present at appropriate institutional conferences;</td>
<td>F</td>
<td>Residents have use of the division’s laptop computer which must be checked out.</td>
</tr>
<tr>
<td>6.3 Residents shall have access to a sufficient variety of journals, books, and resource materials appropriate to medical physics, as well as to the internet and a general medical library;</td>
<td>F</td>
<td>In further developments the program recognizes the need to improve resident feedback and documentation to provide timely information to the resident.</td>
</tr>
<tr>
<td>6.4 Residents shall have access to adequate clinical facilities appropriate for a medical physics residency program;</td>
<td>F</td>
<td>It appears that these issues are only beginning to be addressed by the program.</td>
</tr>
<tr>
<td>6.5 Residents shall be provided with a mechanism for feedback concerning the quality of their instruction and the diligence of their mentors. The residents shall be protected from repercussions if that mechanism is used. Feedback on the entire program should be sought from program graduates;</td>
<td>P</td>
<td></td>
</tr>
<tr>
<td>6.6 Issues and concerns identified by feedback from residents and graduates shall be evaluated by the steering committee, and remedial action taken where appropriate.</td>
<td>N</td>
<td></td>
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</tbody>
</table>

**Observations:** Adequate support facilities are available to the resident. A divisional laptop computer is available to the resident. It appears that feedback from the resident and its evaluation are only beginning to be addressed.

**Requirements:** Procedures for obtaining resident feedback must be implemented to be in compliance with Residency Standards 6.5 and 6.6.

**Recommendations:** Consider providing a separate computer for the resident’s use.
Residency Program non-compliance issues

Individual program non-compliance issues are posted on the CAMPEP website
The following programs have been found to be non-compliant with one or more of CAMPEP standards. These programs maintain their accreditation while these issues are addressed and are required to report on progress towards meeting the standards annually.

Xxxxxx Residency Program

• Non-compliance with CAMPEP Standard 2.4: Admission requirements shall be consistent with CAMPEP policy as described in the Policy and Procedures Manual

Xxxxxx Residency Program

• Non-compliance with CAMPEP Standard 7.3: All educational and scholarly activities engaged in by residents shall be recorded in an activities journal maintained personally by each resident and examined periodically by the program director and steering committee to ensure that the resident is progressing satisfactorily.
Program must have a website available to the public

Besides providing information on their program the website must provide information on their residents

- Number of applicants
- Number offered admission
- Number admitted
- Graduates and information on employment
Program Review-time frame

Assign review team after fee & self-study submitted (1→2 mo)
Evaluate self-study (4→6 weeks)
Institution response to evaluation (1→2 mo)
Schedule site visit (1→4 mo ???)
Review team submits report to REPRC for discussion/vote (2 weeks)
REPRC sends recommendation to CAMPEP BOD for vote/discussion (2 weeks)

Process: 6 months→year
Reaccreditation

Submit self-study and fee last year of accreditation
Two reviewers assigned
Typically not require site visit
Vote on by REPRC
Vote on by CAMPEP Board
Reminder

40 “volunteer” reviewers

Patience in Review Process
Imaging (11)

Columbia University 2013
Cross Cancer Institute - University of Alberta* 2005
Emory University 2014
Henry Ford Health System* 2009
Mayo Clinic*** 2010
Stony Brook University Medical Center 2009
University of Chicago 2014
University of Florida College of Medicine 2013
University of Texas M. D. Anderson Cancer Center* 2002
Upstate Medical Physics*** 2010
West Physics*** 2013
Nuclear Medicine (2)

MD Anderson
Cross Cancer Institute University of Alberta
# Summary of Residency Programs

<table>
<thead>
<tr>
<th>Programs</th>
<th>Accredited</th>
<th>In Process</th>
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</thead>
<tbody>
<tr>
<td>Therapy</td>
<td>80</td>
<td>0</td>
</tr>
<tr>
<td>Diagnostic</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>DMP</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Nuc Med</td>
<td>2</td>
<td>0</td>
</tr>
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</table>
For 2015 there were the following number of openings in residency programs

Therapy: 104
Imaging: 13
How many medical physicist required per year?

Estimates are

\[ \approx 125 \text{ in therapy} \]

\[ \approx 20 \rightarrow 30 \text{ in Imaging} \]

\[ \approx 5 \rightarrow 10 \text{ ??? in Nuclear Medicine} \]
## Residency Slots

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2013</th>
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<tr>
<td><strong>Slots per year</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy</td>
<td>47.5</td>
<td>51.5</td>
<td>58.5</td>
<td>115.5</td>
</tr>
<tr>
<td>Imaging</td>
<td>6.0</td>
<td>5.5</td>
<td>7.5</td>
<td>(total)</td>
</tr>
<tr>
<td><strong>Total enrolled</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy</td>
<td>88</td>
<td>102</td>
<td>130</td>
<td>267</td>
</tr>
<tr>
<td>Imaging</td>
<td>11</td>
<td>12</td>
<td>19</td>
<td>(total)</td>
</tr>
<tr>
<td><strong># Completed program</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Therapy</td>
<td>36</td>
<td>40</td>
<td>48</td>
<td>100</td>
</tr>
<tr>
<td>Imaging</td>
<td>6</td>
<td>5</td>
<td>5</td>
<td>(total)</td>
</tr>
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Nuclear Medicine Residencies???
The 2 +1 Nuclear Medicine Physics Residency Training Program

With the current need for qualified nuclear medicine physicists CAMPEP has agreed to allow a 2 + 1 residency program. This 2 + 1 program allows for the following:

i. A CAMPEP-accredited two-year Imaging Residency Program can offer an additional 12 months of Nuclear Medicine Physics training to its residents, or

ii. A CAMPEP-accredited two-year Nuclear Medicine Residency Program can offer an additional 12 months of imaging specific training to its residents.
Affiliate Sites

(Spoke)

(3 / 1)
POLICY

Medical Physics Residency Education Programs encompassing affiliate sites (spokes) shall ensure that uniform standards and procedures are maintained across all participating institutions.
New affiliate/spoke sites added to an accredited program?

- New site provide CAMPEP with a self study to be reviewed by CAMPEP
- The site must have all the associated structure & documentation previously described – including an Associate PD
- Will require a site visit
- Additional fees will be assessed by CAMPEP for conducting the site review
Key Points to Remember

• Single body with clear line of responsibility
• Single faculty albeit with different affiliations
• Residents communicate regularly with each other meetings or tele/video
• Elected resident to sit on the residency committee
• Standardized evaluation mechanism
• Written contractual agreement among components
• Director at the Hub is responsible for the entire program
Residency Match Program
See May-June Newsletter

- Programs participating – 86
- Applicants participating – 280
- Average ranking submitted – 13.9
- Positions offered – 112
- Positions filled 108 (96%)
- Applicants matched - 39%
- 31 programs received > 150 applications
Figure 5. Match statistics for various subsets of applicants. The size of each colored region indicates the proportion of that class of applicant in that category.
Registering for the Match

Common Application Program (CAPs)

Medical Physics-Residency Application Program (MP-RAP)
Thank you for your attention

Questions ???