Controversial Medical Physics Topics: An Interactive Session

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Learning Objectives

- Discuss the meaning of ethics and professionalism
- Review relevant AAPM publications relating to identified controversial topics
- Discuss controversial topics and discover audience opinion from audience interaction

Conflict of Interest

Per:

- Owner of Quality Medical Physics LLC, a small consulting practice – provides peer review services
- Active volunteer in the AAPM and ACR

Kyle:

- As a member of the US Oncology Physics Advisory Committee, provides peer reviews to affiliated sites
- Active volunteer in the AAPM and ACR

David:

- Paid educational speaker for MTMI
- Active volunteer in the AAPM

Jessica:

- Reviewer and active volunteer in the AAPM and ACR

Conflict of Interest

- Disclosure and reporting of quality/safety issues that affect financial performance of clinical unit (see also Chains of Command)
- Competition and “turf” among professional societies with overlapping membership

Chain of Command

- What is the appropriate reporting structure for clinical physicists?
- How is this influenced by the different “hats” a physicist typically wears?
- What potential conflicts exist within the organization?

Clinical radiation oncology physicists should report to:

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1. Medical director of Radiation Oncology
2. Administrative director of Radiation Oncology
3. Radiation Safety Officer/Committee
4. Facility COO or Director of Clinical/Support Services
5. Chief Quality / Safety Officer

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Clinical imaging physicists should report to:

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0% 1. Medical director of Radiology

0% 2. Administrative director of Radiology

0% 3. Radiation Safety Officer/Committee

4. Facility COO or Director of Clinical/Support Services

5. Chief Quality / Safety Officer

A Radiation Safety Officer should report to:

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0% 1. Medical director of Radiology

0% 2. Administrative director of Radiology

0% 3. Risk Management / General Counsel

4. Facility COO or Director of Clinical/Support Services

5. Chief Quality / Safety Officer

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Chain of Command

- What potential problems exist for the identified chains of command?
- What is the appropriate role of secondary (“dotted line”) reporting relationships?

References

- AAPM Report 160 – RSO Authority/Letter of understanding with executive management gives authority for the RSO to perform duties
- ACR Guide to Medical Physics Practice http://www.acr.org/Membership/Legal-Business-Practices/Group-Practice-Resources/Guide-to-Medical-Physics-Practice

ACR Guide to Medical Physics Practice

- Chain of Authority:
  - Report to the medical director for clinical matters and the facility's senior administration (VP) for administrative matters

Following the rules

- What to do when a professional colleague does not follow AAPM / ACR / ASTRO established “rules”

Scenario 1

- The radiation oncologist does not stay at the HDR console during treatment delivery, but goes to see patients or works in his office. Does this meet the criteria of ‘direct supervision’ and what do you do?

Scenario 1

- “direct supervision” means that the physician must be immediately available to furnish assistance and direction throughout the performance of the procedure.

Scenario 1 what do you do...

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1. Refuse to treat the patient unless the Dr. stays at the HDR console
2. Allow the Dr. to leave the console but only go as far as he can directly hear you
3. As long as the Dr. stays in the department and is accessible by phone, then you're good
4. If the Dr. is accessible via cell phone and can come to the department quickly, then you're good
5. It's not my job to keep track of where the Dr. is, I just need to do my part of the procedure correctly

Scenario 2

- The Sr. Physicist at your center does not consistently follow AAPM TG's and marks his/her tests as Pass or Fail with no results.

Scenario 2

- **AAPM Code of Ethics**

  Response to impaired or incompetent colleagues

  The safety and welfare of patients are primary concerns of members. If, due to some impairment, a colleague is perceived to jeopardize the patient’s welfare, members should attempt to respond on the patient's behalf. The particular circumstances may be ambiguous and members should proceed judiciously. If a legal, contractual or regulatory obligation to report the concerns exists, the member shall comply with that obligation.

Scenario 2 what do you do...

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1. Report your colleague to the Chief Physicist / Administration
2. Insist on working with your colleague and show him the correct procedures
3. Let you colleague know that you are on to them and they better start following the rules or ‘else’
4. Since you know that patient safety is not *really* at risk, you decide to do nothing
5. You go behind your colleague and perform the tests correctly effectively doubling your workload

Scenario 3

- As a diagnostic consulting physicist, you note on your report that the techs are not following the ACR QA guidelines that they committed to. It’s now 1 year later and you find they are still not following the guidelines.

Scenario 3

- **American College of Radiology**

  The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence by reporting, to the appropriate body, without hesitation, perceived illegal or unethical conduct of members of the medical profession. Members should uphold all laws, uphold the dignity and honor of the medical profession and accept its self-imposed discipline and deal honestly and fairly with patients and colleagues.

Scenario 3 what do you do...

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1. Note this in your report (again) and move on
2. Contact the department manager directly to voice your concern
3. Contact the hospital administration directly since you know the department manager would have read your report and should have corrected the techs already
4. Contact the radiology group that provides service there to alert them to the issue
5. Contact the ACR and report the site

Supervision

- The AAPM has several Professional Policies defining the Qualified Medical Physicist (QMP), Scope of Practice of medical physics work, and levels of professional supervision of individuals who are not QMPs.
- AAPM TG reports provide recommendations for work that should be performed for specific services in imaging and therapy. Hospitals and clinics pay market rates for medical physics coverage for these services. In many cases, they are reimbursed for the physicist labor through CPT codes.

For tasks clearly defined as medical physics duties (such as annual CT evaluations & protocol review, or review and QA of IMRT plans):

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1. The work must be performed by a QMP
2. The work can be performed by anyone as long as it is co-signed by a QMP
3. The work must be performed by a medical physicist, e.g. a resident & co-signed by QMP
4. The payer decides – AAPM has no authority
5. Whatever the state regulations require – if the state regulations do not require anything, then anyone can do it.

Supervision References

- AAPM Professional Policies 17, 18, 22
- ACR Tech Std for External Beam Physics

Use of recalls

- Most medical physicists seek certification from the American Board of Radiology.
- All ABR exam content is copyrighted.
- There are several methods used to prepare for the exam.

Some preparation strategies

- Review text books, practice guidelines, technical standards as well as clinical publications
- Pay for preparatory courses or mock exams
- Purchase or obtain recalled questions
- Use study groups with local colleagues or online

It's time to prepare for your exam and you consider use of recalled questions:

0% 1. It's ok to use and memorize exact exam questions

0% 2. It's ok to ask others about their experience to get an idea of what to expect

0% 3. It's not OK to use exam recalls because they are copyrighted material

0% 4. It's better to use Raphex exams

0% 5. I'll just pay for a class with recalled questions

Future of NM Physics

- With ABR 2014 requirements rolling out, NO CAMPEP-accredited NM residencies in place
- Is NM physics part of Diagnostic/”Imaging”?
- What about physicist role in NM therapy?
- Overlap with health physics / RSO

Future of NM Physics

- Demand for NM physics support unclear
  - Overlap with service engineers, technologists?
- Recognized specialty by licensure states
- ABSNM also recognized by ACR, NRC
- Small number of exclusively-NM

Recent ABR Statistics

Medical Physics, Part 2 - Diagnostic

Year	Percent Passed	Number Taking
2007	70	37
2008	71	35
2009	70	40
2010	69	51
2011	74	53

Medical Physics, Part 2 - Nuclear

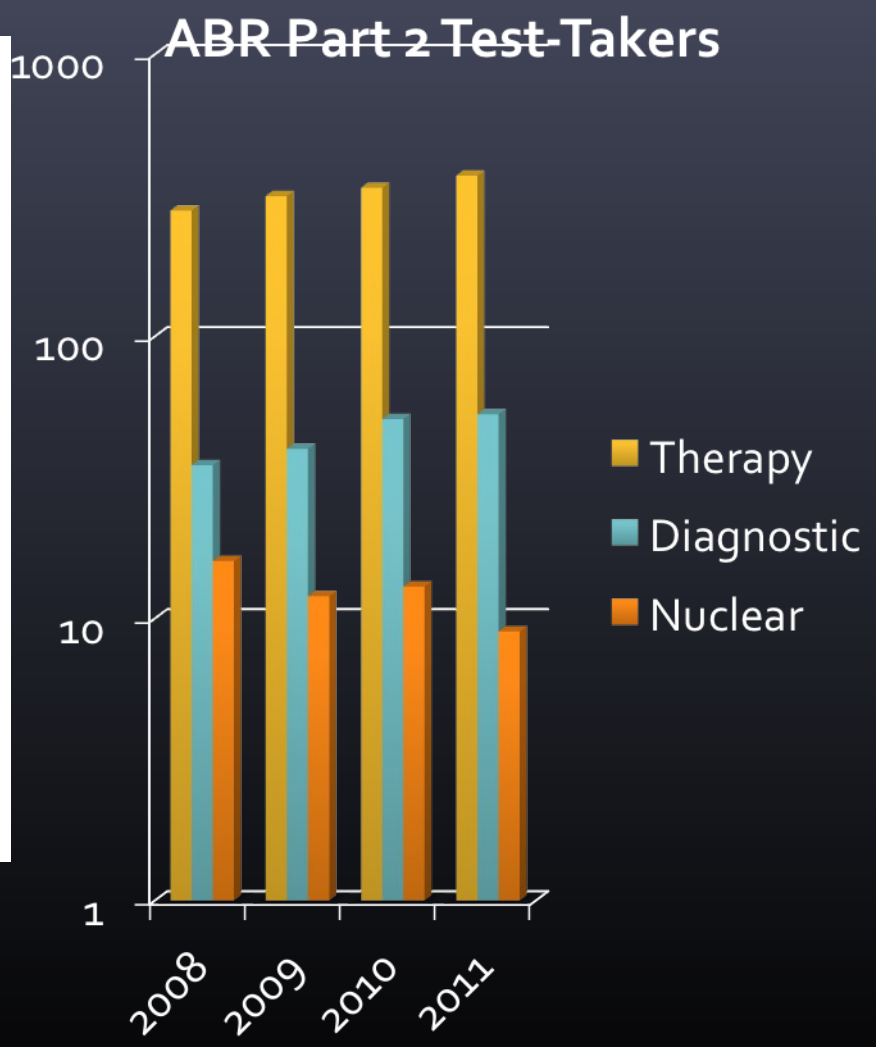
Year	Percent Passed	Number Taking
2007	56	9
2008	31	16
2009	58	12
2010	62	13
2011	33	9

Medical Physics, Part 2 - Therapy

Year	Percent Passed	Number Taking
2007	70	256
2008	71	280
2009	70	315
2010	72	337
2011	72	372

Medical Physics Oral - All Exam Takers

Year	Percent Passed	Number Taking
2007	47	229
2008	57	289
2009	55	287
2010	53	319
2011	56	363



http://www.theabr.org/ic-rp-score#result
Retrieved March 15, 2013

How should we train and certify NM physicists in the post-ABR-2014 era?

1. Incorporate (absorb) elements into ABR Diagnostic and Therapy residencies and exams

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2. Maintain distinct ABR pathway with same process as Diagnostic/Therapy

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3. "Secondary" ABR certification for physicists already certified in Dx or Tx with additional training in NM

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4. Eliminate ABR NM physics certificate; make ABSNM the NM physics certifying board

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5. Establish NM physics certification via ABMP

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New table from the ABR

	DMP	NMP	TMP
Category 1	Radiography, Fluoroscopy, and Interventional Radiology	SPECT & hybrids, including gamma cameras	Radiation Protection and Patient Safety
Category 2	Computed Tomography	Radiation Protection	Patient-related Measurements
Category 3	Non-ionizing Techniques – MRI and Ultrasound	PET & hybrids	Image Acquisition Processing & Display
Category 4	Shielding, Radiation, and Protection	Radiation Measurements	Calibration, Quality Control, and Quality Assurance
Category 5	Radiation Dosimetry and Patient Safety	Clinical Procedures	Equipment

Peer review

- Peer review is broadly recommended for medical physicists (Safety is No Accident, ACR Accreditation). The AAPM TG-103 report provides guidelines for physicist peer review.
- Even when the peer review is voluntary, the reviewer may discover serious deficiencies in the incumbent physicist's program or performance.
- To whom is the reviewer ultimately

If the peer review uncovers serious performance or program deficiencies which pose a patient safety concern:

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1. The peer reviewer should discuss with the incumbent but no one else → confidentiality above all else
2. The reviewer should inform the hospital management immediately, without telling the incumbent so he can't cover it up
3. The reviewer should inform the incumbent, then the hospital, then the state
4. The reviewer should call the media – the most effective way to prevent patient harm is to shut down the service
5. Ignore it – one man's perspective only

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Peer Review Reference

- AAPM TG-103
- Safety Is No Accident report, www.astro.org
- ACR Rad Onc Accreditation requirements