MOC

Maintenance of Certification

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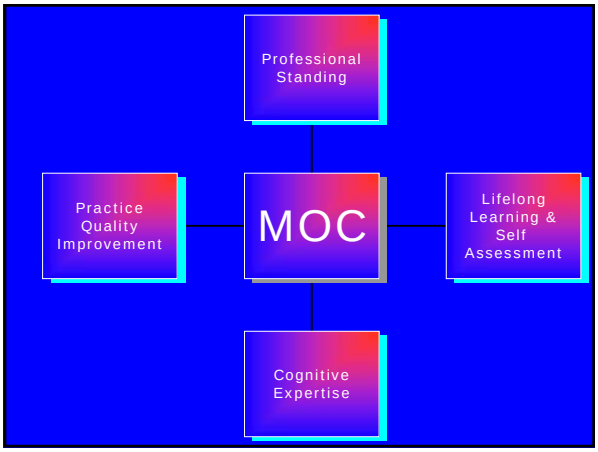
Paradigm Shift

- Old
  - Training
  - Certification: Lifetime
  - CME
  - Reputation
- New
  - Training
  - Certification: Time-limited
  - MOC: Lifelong process
  - Objective assessments



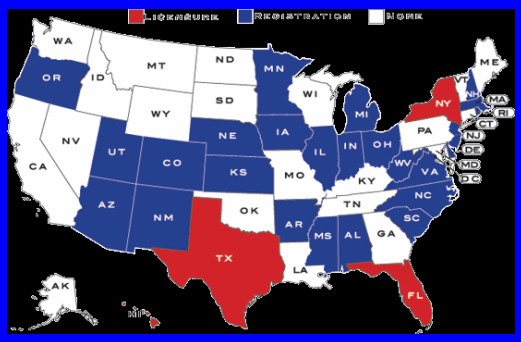
Status

- Time Limited Certificates started in 2002

Time Limited Certificates	731
Enrolled in MOC	94%
Have entered LLL or SAM's	12%
Are current with fees	76%

MOC Is Dynamic

- The MOC Requirements Change
- New Elements Come into Effect in the Later Years of Each Cycle



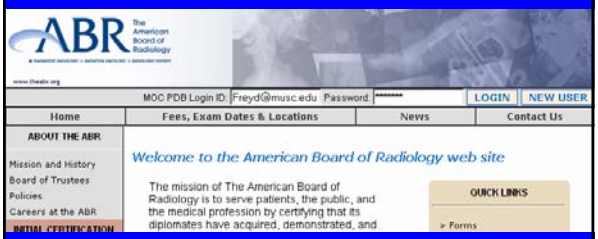
Attestation

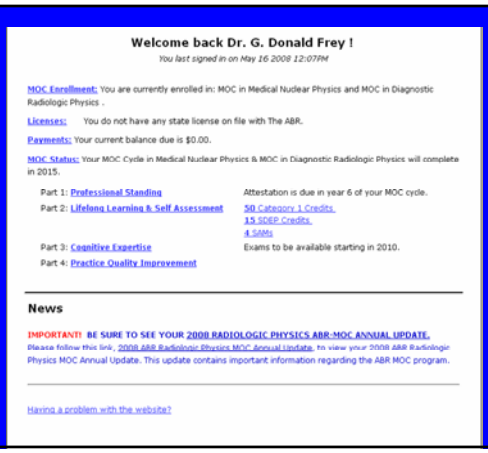
- Attestation is a way for non-licensed Medical Physicists to have medical physicists and physicians familiar with them to attest to their professional standing
- Attestation process is linked to the six competencies

Six Competencies

- Patient Care
- Practice Knowledge
- Interpersonal & Communication Skills
- Professionalism
- Practice Based Learning & Improvement
- Systems-based Practice

ABR Personal Data Base

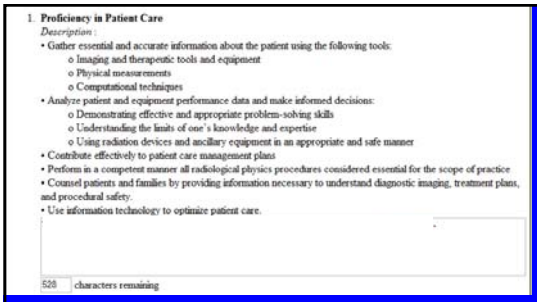


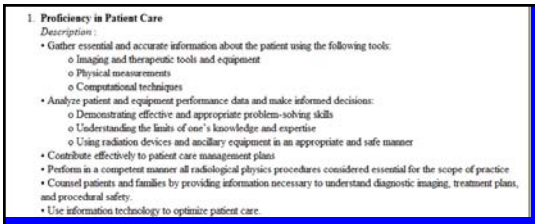


Attestee View – Professional Standing

Attestee View

Attestee View





Uses imaging equipment for surveys and physical measurements for patient dosimety. Measures radiation exposures and calculates doses and other patient related quantities. Does appropriate surveys on equipment. Can advise radiologists and medical physicists about the performance status of equipment. Uses equipment safely. Is able to perform radiologic physics procedures. Is able to counsel patients and staff about radiation effects. Is able to use computers effectively.

Attestee View

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Attestee View

Attestee View

Attestee View

Attestee View

Attester View

Attester View

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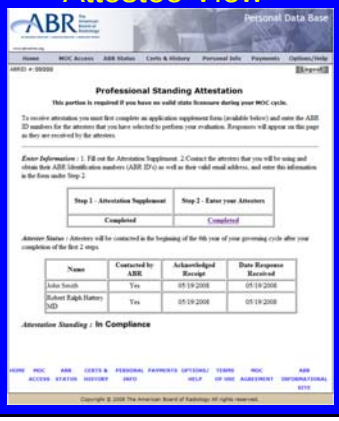


Attestee View

Lifelong Learning & Self Assessment

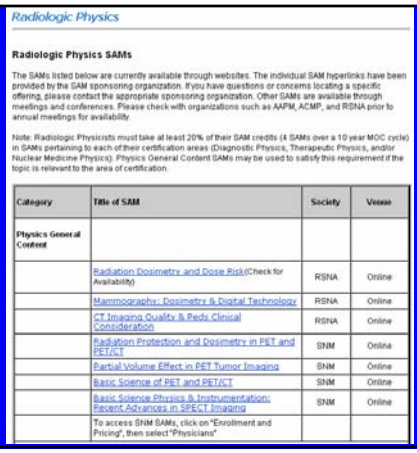
- 25 hours of MPCEC or Category I
- 2 SAMS

Lifelong Learning

- Changed the requirement in 2007
  - From 500 [50 per year] Hours (Cat I & Cat II)
  - To 250 [25 per year] Hours (Cat I)
- 15 hours per year can come from SDEP's
  - Self Directed Educational Project

Self Assessment Modules

- 20 [2 per year]
- AAPM offers SAMS at the Annual Meeting
- Soon the will be online
- Other organizations offer SAM's for medical physicists



Radiologic Physics

Radiologic Physics SAMs

The SAMs listed below are currently available through websites. The individual SAM hyperlinks have been provided by the SAM sponsoring organization. If you have questions or concerns locating a specific offering, please contact the appropriate sponsoring organization. Other SAMs are available through meetings and conferences. Please check with organizations such as AAPM, ACMP, and RSNA prior to annual meetings for availability.

Note: Radiologic Physicists must take at least 20% of their SAM credits (4 SAMs over a 10 year MOC cycle) in SAMs pertaining to each of their certification areas (Diagnostic Physics, Therapeutic Physics, and/or Nuclear Medicine Physics). Physics General Content SAMs may be used to satisfy this requirement if the topic is relevant to the area of certification.

Category	Title of SAM	Society	Venue
Physics General Content			
	Radiation Dosimetry and Dose Risk(Check for Availability)	RSNA	Online
	Mammography: Dosimetry & Digital Technology	RSNA	Online
	CT Imaging Quality & Peds Clinical Consideration	RSNA	Online
	Radiation Protection and Dosimetry in PET and PET/CT	SNM	Online
	Partial Volume Effect in PET Tumor Imaging	SNM	Online
	Basic Science of PET and PET/CT	SNM	Online
	Basic Science Physics & Instrumentation: Recent Advances in SPECT Imaging	SNM	Online
	To access SNM SAMs, click on "Enrollment and Pricing", then select "Physicians"		

MOC

- MOC is intended to be a continuous process thus there are limits to the amount of Life-long learning and SAM credits that are acceptable each year
  - Life-long Learning 50
  - SAMS 4

Getting Behind

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
0	50	20	30	25	10	50	25	20	30	260

0	0	0	0	0	0	50	50	50	50	200

There is a point where it is impossible not to have a lapse in your certification. Enters "Non-recoverable" status

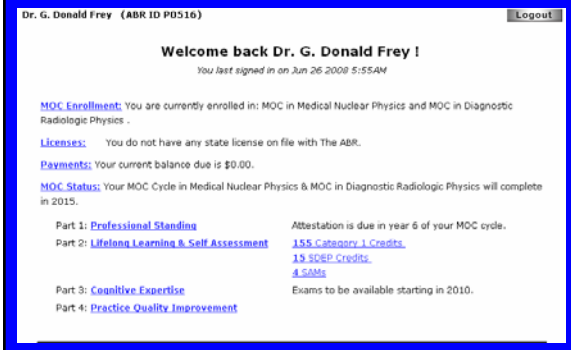
Year Entered MOC

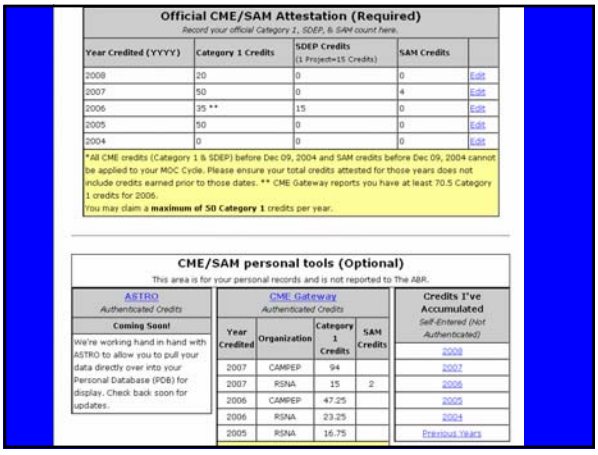
you will have some period of lapse if you have not done any MOC or SAM's by

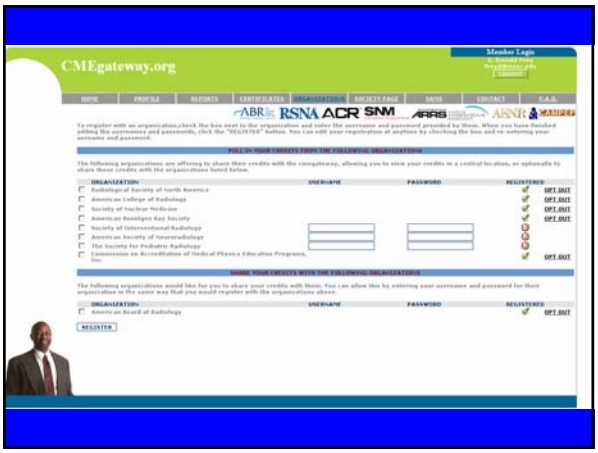
2002	2003	2004	2005	2006	2007	2008
2009	2010	2010	2011	2012	2013	2014
2010	2010	2011	2011	2012	2013	2014

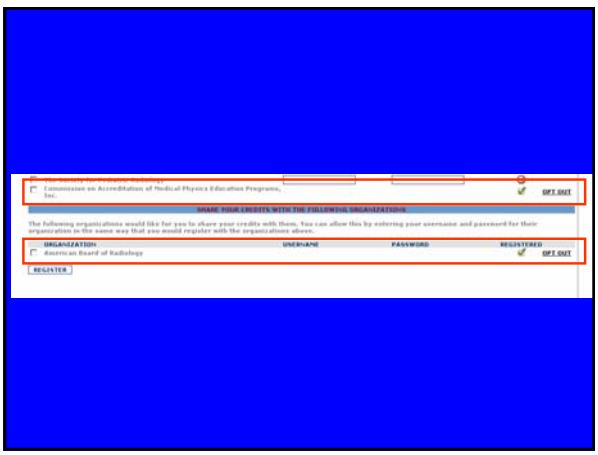
LLL

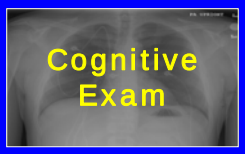
SAM











- One per Cycle
- Take in years
  - 8, 9, 10
- Pilot in 2009
- First Exam 2010

Study Guides Will Be Provided

Sample Data from NMP Study Guide

General Information
Approximately 30% of the material on the examination is core nuclear medicine physics, technology and safety. The rest is taken from recent advances in the field.

Length and Structure
The exam is approximately 100 questions in length. All questions are multiple choice questions. Most have four possible answers. The standard Microsoft Calculator is available but no complex calculations are required.

Clinical Procedures
Candidates should have a general knowledge of common diagnostic and therapeutic nuclear medicine procedures

Reports and Documents

•AAPM Task Group 108: PET and PET/CT Shielding Requirements
•NCRP 134: Operational Radiation Safety Training
•NCRP Report 138: Management of Terrorist Events Involving Radioactive Material
•NCRP Report 147: Structural Shielding Design for Medical Imaging Facilities
•BEIR VII:
•NRC Regulations relevant to nuclear medicine
•ACR Nuclear Medicine Practice Guidelines and Technical Standards for Nuclear Medicine
•MIRD Dose Estimate Report No. 19: Radiation Absorbed Dose Estimates from 18F-FDG

Protocols and Testing Procedures

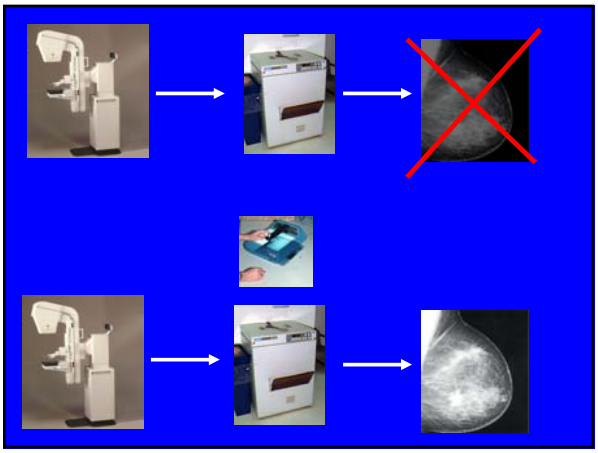
•ACR CT Accreditation
•ACR SPECT Accreditation
•ACR PET Accreditation
•PET Performance Measurements Using the NEMA NU 2-2001 Standard
•Performance Measurements of Scintillation Cameras Using NEMA NU 1-2001 Standard

Practice Quality Improvement

- All diplomates must have training in PQI
- All must be continuously involved in the PQI process

PQI - Rationale

- Significant issues of quality and safety in medicine
  - Institute of Medicine “To Err Is Human”
- Industrial Experience from Manufacturing
  - Process Control

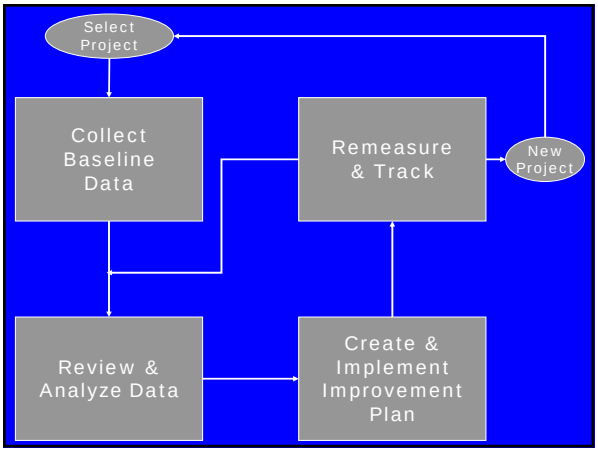


"All Radiologic Physics diplomates must be trained in the process and procedures of quality improvement …

First Steps

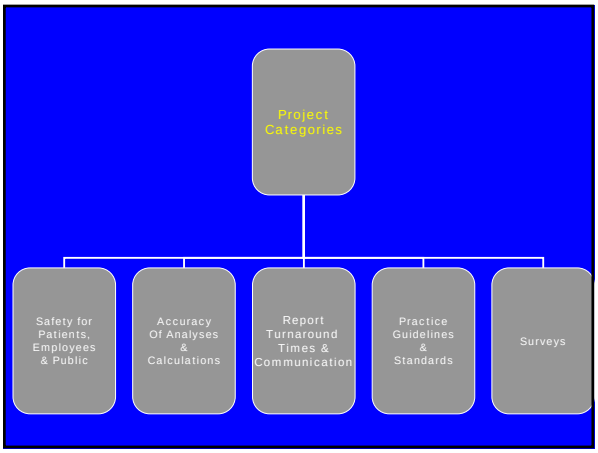
- Training is the First Step
- We need to learn to do effective projects that improve health and safety
- We need to incorporate PQI into the fabric of the culture of our work
- It took Toyota more than 20 years to transform it's manufacturing culture

ABR PQI Process

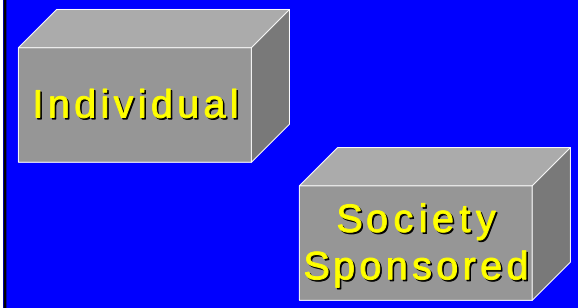


The 10 yr Cycle

Year of Cycle	A guideline of what might be done each year of the ten-year MOC cycle
1	• Quality Improvement education (First cycle)
2	• Select project and metrics • Collect baseline data
3	• Analyze data • Create improvement plan
4	• Implement improvement plan • Might include data collection
5	• Collect data • Compare to initial baseline • Summarize, draw conclusions
6	• Select new project and metrics or modify improvement plan for previous project • Collect baseline data
7	• Analyze data • Create improvement plan (if new project)
8	• Implement improvement plan • Might include data collection
9	• Collect data • Compare to initial baseline • Summarize, draw conclusions
10	Cycle concludes



Types of Projects



Fee's and Late Fees

- ABR has had a significant expense associated with MOC
  - MOC Staff
- Increased fees for ABMS

Fees

- For original enrolled individuals the fee was constant for all 10 years of the cycle.
- This will start to increase on an annual basis beginning with the group having certificates expiring in 2018 and will apply to other groups when they finish their first cycle.
- Fee for someone with a MOC cycle starting in 2008 is $180 per year

Late (or No) Payment Has Been An Issue

- Not nearly so much for physics as for the other disciplines
- However starting on January 1, 2009 a late fee of $100 will apply for those who have not paid the previous years dues.

The ABR Takes the Following Steps to Keep Enrolled Individuals Informed

- 1) Discussions held at ABR Booth at society meetings
- 2) Pamphlets distributed at various society meetings
- 3) Trustee presentations at various society meetings
- 4) Articles, announcements in paper and electronic newsletters of various societies
- 5) The Beam
- 6) Articles published in Radiology, AJR, the Red Journal, etc.
- 7) Email from the ABR
- 8) Snail mail/postcards from ABR
- 9) Website content and FAQs
- 10) Direct email responses to individual email questions
- 11) One-on-one phone conversations with diplomates in office
- 12) Surveys

MOC

- The full integration of the MOC process so its components are fully integrated into the training and practice of medical physicists will be lengthy
- However this process will strengthen the profession and increase public trust