



MOC: Practice Quality Improvement

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Much of the content presented is adapted from other individuals' efforts, including ABR Trustees, ABR Staff, and ABR volunteers



American Board of Radiology Mission

"To serve patients, the public, and the medical profession. . ."

"By certifying that its diplomates have acquired, demonstrated, and *maintained* a requisite standard of knowledge, skill, and understanding. . ."



Why MOC?

- Demonstrates commitment to lifelong learning and self-assessment
- Allows the diplomate to self-direct own continuing education
- Results in continuous quality improvement
- Provides a mechanism to reach goals related to patient quality and safety



Continuous Certification Summary

Element	Compliance Requirement
Licensure	At least one valid license or professional standing attestation in previous 5 years
CE	At least 50 Category 1 CE in previous 3 years, <i>and</i>
Self-Assessment CE	At least 25 Self-Assessment CE in previous 3 years
Exam	Passed MOC exam in previous 10 years
PQI	Completed at least 1 PQI project in previous 3 years
Fees	Current with MOC fees at any time during the past 3 years



Practice Quality Improvement

A framework to facilitate improvement of medical care and/or its delivery as an individual, a group, or an institution

Quality and safety in medical care have become important national priorities

PQI part of MOC permits *medical physicists* to demonstrate both their commitment to quality and safety as well as their compliance with associated external requirements



PDSA Cycle: intrinsic to PQI

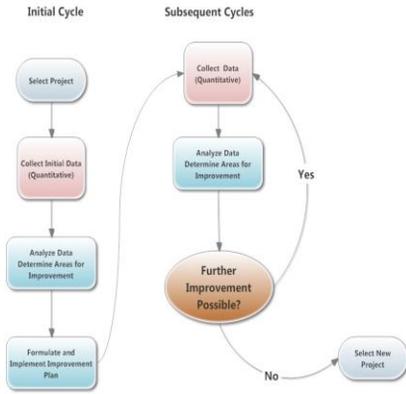
PLAN: Identify an area in need of improvement and devise a measure to assess it. Develop a plan to implement the measure and obtain data. Set goal for the measure to be reached.

DO: Set your plan in motion and collect data.

STUDY: Determine how the measure compares to the goal. Explore root causes for lacking goal achievement.

ACT: Consider what can be done to address the root causes and develop an improvement plan to implement during the next PDSA cycle.







PQI Project requirements

PQI projects must:

- Be practice-relevant
- Include focus on patients – care & safety
- Use QI principles: Plan-Do-Study-Act
- Generate an improvement plan
- Implement the plan
- Measure the effectiveness over time
- Subsequently re-measure and re-assess

Opportunity for integrated, practical physics



PQI project initiatives

- ABR recognizes that there are many types of QI programs and *encourages development of creative and novel PQI initiatives*
- General categories of QI initiatives:
 1. **Independent projects** generated by individuals or groups
 2. **Society-based projects** or templates generated and managed by professional societies or other organizations



Independent PQI Projects

- Generated by practice *individuals or groups*
- Do not require submission of the plan to the ABR for advance review
- Can reflect departmental QI programs*, adapted by the individual to include their personal assessment and improvement/action plan



Independent PQI Projects

- May be based on an ABR-endorsed, society-provided template, which fulfills the essential elements of a PQI project
- Templates are available through the societies' and ABR websites



Collaborative PQI

Many high-quality PQI projects are collaborations between medical physicists and physicians

Both must contribute to the process

Medical physicists bring special skills to the patient care process

- familiarity with designing quantitative projects
- ability to apply statistical techniques to data analysis
- a knowledge of statistical quality control processes

Results can be institutionally useful in relating to the competency of Systems-Based Practice



Group PQI Projects

- Well-suited to address systems-based problems
- Tremendous potential as a multiplier of MOC's power to advance healthcare quality and safety
- More convenient and manageable for administrative purposes



Group PQI Projects

- Must designate project leader
- Document project title, description, and timeline
- Participants must attend 3+ meetings for credit**
- Each participant must fulfill **meaningful participation requirements** during the project and upon completion
- Each participant must complete a short paragraph of self-reflection stating the ways in which the project positively impacted practice / patients

<http://theabr.org/sites/all/themes/abr-media/pdf/ABR-PQI-Guide.pdf>



Group PQI Projects

Can link directly to departmental/institutional QI programs; Examples:

- Detailed departmental quality improvement programs related to the ACR standards / peer review
- Quality improvement programs related to patient safety, medical documentation, communication
- Multidisciplinary quality improvement programs related to patient care and management compared with accepted consensus or evidence-based practice



Documentation of PQI

- Generic templates available through the ABR and/or specialty-related organizations
 - **DO NOT need to be submitted to the ABR**
- Diplomates should keep individual records of their data and updated improvement plans
- Participation recorded in the ABR personal database by **“attesting”** to PQI participation and answering a few questions



ABR Individual and Group PQI Templates*

***Templates include all essential elements needed to comply with ABR “meaningful participation” requirements**

American Board of Radiology
MOC Part 4: Practice Quality Improvement (PQI)
Individual Participant PDSA (Plan-Do-Study-Act) Checklist & Summary Record*

BASELINE PDSA CYCLE (Cycle #1)

(In Cycle #1, a topic is selected, and baseline data are gathered to compare with post-improvement plan data in Cycle #2.)

Step 1. PLAN. Identify and Describe the Project (Self-Designed)

- Topic (area of interest). This should address a part of your practice that you would like to improve, or an observed gap in service or patient care: _____
- Define a measurement to be obtained: _____
- Establish a desired measurement target/goal. What do you want the measurement to be in order to achieve an appropriate standard of performance and/or patient care? _____
- Predicted baseline measurement result. What do you think the measurement will be? _____

Step 2. DO. Baseline Measurement Summary

- Number of data points collected: _____
- Baseline measurement value calculated: _____

Step 3. STUDY. Data Analysis

- How did the baseline measurement results compare to the predicted measurement result? _____
- How did the results compare to the desired target goal? _____
 - If baseline results did not meet the target, the potential contributing factors and/or root causes: _____



PQI Template for recording data

American Board of Radiology
MOC Part 4: Practice Quality Improvement (PQI)
Group Participant PDSA (Plan-Do-Study-Act) Checklist & Summary Record*

PLEASE NOTE: This optional form contains the structural elements for GROUP PQI project process record-keeping. Separate recording of the data elements of a project should be attached to this form. DO NOT SEND this form to the ABR unless requested to do so during an audit. This form is appropriate for GROUP PQI efforts.

BASELINE PDSA CYCLE (Cycle #1)

(In Cycle #1, a topic is selected, and baseline data gathered to compare with post-improvement plan data in Cycle #2.)

Group members: Tony Seibert, PhD (Lead)
Jasjeet Bindra, MD (member)



Checklist & Summary Record

American Board of Radiology
Group Participant PQSA (Plan Do Study Act) Checklist & Summary Record*

MOD Part 4: Practice Quality Improvement (PQI)
Group Participant PQSA (Plan Do Study Act) Checklist & Summary Record*

Baseline PQSA CYCLE (Cycle #1)

In Cycle #1, a team is selected and baseline data performance is compared with goal improvement plan from Cycle #2.

Group members: Tom Sellers, PhD (lead)
 Andrew Baker, MD (member)

Step 1: PLAN, Identify and Describe the Problem (Baseline Definition)

OBJECTIVE METRIC #1: November 10, 2012

- Select a team (area of interest). This should address a part of your group's practice that would like to improve, or an identified goal (practice or patient care). Radiation dose tracking, monitoring, and communication, in response to the California State Board of Radiation Protection and Control and included in the interpretive report of the exam, effective July 1, 2012.
- Define a measurement to be measured. Identify all CT practice dose metrics within a SICOM, identify relevant CT vendors and models, formulate a CT radiation dose tracking interpretation report through either a practice CT PACS and associated DICOMV, DICOMV.
- Establish a desired measurement comparison. What does the group want the measurement to be in order to achieve an appropriate standard of performance and/or patient care? Based upon metrics, the metric of the California State Board of Radiation Protection and Control, effective July 1, 2012, is that a compliance of 25% should be reached, with some data not being available for some well known PACS, those with data, not being available.
- Outline the predicted baseline measurement result. What does the group think the measurement will be initially, with associated information such as the data, the compliance rate, the percentage of compliance, etc. The baseline will be 0% compliance, with some data not being available, etc. The baseline will be 0% compliance, with some data not being available, etc.

- Number of dose reports returned. A random sampling of radiology reports was performed for several dose reports. SICOMs from 10/20/12 and the radiology report was opened and reviewed for the presence of a dose report. A total of 16 exams were reviewed.
- Baseline measurement value: compliance: 0.0% (0 of 16) dose reports. Note: Dose reports, but more dose reports were not complete, as indicated, per feedback. In those reports, either an "incompletable" or "not available" comment is present, or the metric was correct, but the dose report section, none considered to be accurate, finalized.

Step 2: STUDY, Baseline Data Analysis (SICOM MEETING #1)

- How did the baseline measurement results compare to the predicted measurement result? The baseline results were above the predicted compliance rate, but still below the desired compliance rate.
- How did the results compare to the desired target goal? The results were not in compliance with the desired target goal of 25% compliance.
- Baseline results did not meet the target, the potential contributing factors and/or root causes:
 - Baseline compliance as a result of incomplete reporting the data for the CT exam dose reports.
 - Incomplete or no reports for receiving the dose data set up in the PACS, incomplete software.
 - Dose reports entered or come out from Radiology dose calculation software.
 - Incomplete, and missing the data, incorrectly placed the data line content, which meant a dose report data that "cannot" be tracked for performance purposes. CT report.
 - A specific CT vendor, dose and dose data to the Radiology software (DICOMV, DICOMV, CT report).
- Proposed to team:
 - If the baseline results consistently did meet or exceed the desired goal, complete steps 1 and 2 in comparison. Then return to step 1 to select a new project and begin a new PQSA process.

Step 3: ACT, Improvement Plan Development

- How did the team address which was contributing factors and/or root causes?
 - Tom Sellers and Andrew Baker will create the data tracking facility, starting with October 11, 2012 to the present, starting with the facility.
 - Establishing the required metrics, the dose reports, including DICOMV and DICOMV, with the compliance.



Checklist & Summary Record

American Board of Radiology
Group Participant PQSA (Plan Do Study Act) Checklist & Summary Record*

MOD Part 4: Practice Quality Improvement (PQI)
Group Participant PQSA (Plan Do Study Act) Checklist & Summary Record*

POST-IMPROVEMENT PLAN PQSA CYCLE (Cycle #2)

In Cycle #2, re-measurement is performed after implementation of the improvement plan developed in Cycle #1.

Step 1: PLAN, Determine that the improvement plan constructed in Cycle #1 has been successfully implemented.

- Baseline the measurement to be observed. Dose metrics are recorded in the radiology interpretive report at a success rate of no less than 25% after.
- Baseline the desired measurement comparison. What does the group want the measurement to be? The compliance should be no less than 25% after.
- Define a measurement to be measured. Identify all CT practice dose metrics within a SICOM, identify relevant CT vendors and models, formulate a CT radiation dose tracking interpretation report through either a practice CT PACS and associated DICOMV, DICOMV.
- Establish a desired measurement comparison. What does the group want the measurement to be in order to achieve an appropriate standard of performance and/or patient care? Based upon metrics, the metric of the California State Board of Radiation Protection and Control, effective July 1, 2012, is that a compliance of 25% should be reached, with some data not being available for some well known PACS, those with data, not being available.
- Outline the predicted baseline measurement result. What does the group think the measurement will be initially, with associated information such as the data, the compliance rate, the percentage of compliance, etc. The baseline will be 0% compliance, with some data not being available, etc. The baseline will be 0% compliance, with some data not being available, etc.

Step 2: STUDY, Re-measurement Data Analysis (SICOM MEETING #2)

- How did the measurement results compare to the predicted result? Data compliance was not favorable, indicating that the improvement did result in a positive outcome.
- How did the measurement results compare to the desired target goal? Same feedback - indicating a successful intervention and PQI project.
- Baseline results did not meet the target.
 - Re-evaluate the improvement plan by determining any problems with the plan's design or implementation, including those preventing root causes from being eliminated effectively.
- Has the target/goal been set too high? Is an adjustment in order?
 - Is the measure the correct one?
 - Are modifications to the measurement plan warranted?
- Proposed to team:
 - Review the plan and re-eval the target, proceed to Step 1.

Step 3: ACT, REVIEW, MONITOR (SICOM MEETING #3)

- Determine whether the group project has met its performance goal.
 - If "yes," apply the improved practice process as a standard and proceed to Step 1 of the project.
 - If "no," proceed with additional PQSA cycles as needed to adjust the improvement plan to the measurement targeted. Continue the existing project either until the goal is met or an end point is otherwise determined. Also, improvement identified through the process as an indication of success, and in some cases, the magnitude of improvement in the project requires additional time and effort that can be reasonably expected.

Step 4: Participate Self Reflection Statement
 This final survey completes the quality improvement process. The PQI without records to be reflective on the project. Improvement in quality and/or safety as a result of the project, and to be considered in the practice or patient care.

Step 5: Each Group PQI Participant Must Complete Patient Complaints - on file on the ABR Account (<https://online.abr.org/faq>)



Maintain data and documentation

	A	B	C	D	E	F	G	H
1	Audit, all CT studies for October 9, 2012							
2			1 = Yes; 0 = No		Comments		Summary	
3	ACCE	Exam type	Dose Report?	Correct loc?			Dose available:	90.1%
4	3582910	CT Angio Chest	1	1			Correct location:	73.7%
5	3583808	CT Abd + Pel	1	1				
6	3583884	CT Chest W	1	1				
7	3573886	CT Abd + Pel	1	1	old version of script			
8	3583885	CT L-spine	0	0	properly dictated, but no indicated Dose Report			
9	3583887	CT L-spine	0	0	these are reconstructions, not resulting in dose to patient			
10	3583881	CT Head	1	0	Brunberg, at end of report			



PQI Project Attestation

James Anthony Seibert, PhD (P1039) [Log Out](#)

Practice Quality Improvement

CT Dose Reporting - Radiology, UC Davis

Project Abstract Reporting CT Dose metrics in the interpretive report of the patient has been required in California since July 1, 2012. This prospective PQI project seeks to determine the rate of compliance by the radiology faculty in providing these values initially with no feedback or training with a subsequent audit of CT records in September of 2012. During a faculty meeting on September 20, 2012, we (Jasjeet Bindra, MD and Tony Seibert, PhD) will discuss the requirements for ensuring that CT dose information and correct formatting are included on the report. We then plan to perform at least three subsequent audits to verify improvements in reporting compliance and formatting accuracy during the next year. Results will be tallied to demonstrate effects of feedback and intervention on the process

Applied to MOC: Yes
 Share this project?: No
 Start Date: 9/10/2012
 Submitted Date: 12/11/2013



PQI Project Attestation

Baseline Plan

Step 1: Plan

- How do you plan to complete your PQI project?
Group
- Select the type of project you plan to complete.
Non-sponsored PQI Project
- Which of the Six Institute of Medicine Quality Aims describes your project? (select all that apply)
Timely
Efficient
Effective
- What measure will you use to gauge performance improvement in the quality/safety gap area you selected?
Audits of the process and statistical methods to demonstrate changes (if any)
- Did you set a performance target?
Yes



PQI Project Attestation

Step 2: Do

- Did you finish collecting your data points?
Yes
- Did you analyze your results?
Yes

Step 3: Study

- Did your baseline meet your target?
No

Step 4: Act

- Did you design an improvement plan?
Yes



PQI Project Attestation

Improvement Plan

Step 1: Plan

1. Did you implement your improvement plan?

Yes

Step 2: Do

2. Did you finish collecting your data points?

Yes

3. Did you analyze your results?

Yes

Step 3: Study

4. Did you meet your performance target?

Yes

Step 4: Act



PQI Project Attestation

5. Please provide a brief narrative describing your reflections on the project, improvements in quality/safety, and the overall value to the practice or patient care.

Reporting CT dose metrics is one of those "detail" issues that can represent extra unwanted work by the radiologist, but must be performed in an accurate and efficient way. Implementation of "automatic" insertion of these values in the interpretive report through informatics tools, however, does not guarantee that the required dose metric values will be appropriately recorded or formatted. All of our practicing radiologists must be cognizant of the need to understand and ensure how the dose data can be properly transferred and formatted on the report. This required a group training session and individual interactions

.....

Patient care indirectly benefits from this recognition of dose values and importance of optimizing CT protocols. The radiology practice and the UC Davis Medical Center also benefits for meeting the letter of the law (no unintended violations of the public health statute) and demonstrating leadership that others can mimic.

6. Please enter the date your project was completed.

12/11/2013



Random Annual Audits

Each diplomate should maintain records (even if participating in an organizational project)

If audited, ABR requires submission of

Evidence of Part 1

Details of Part 2

Outline of elements of Part 4 PQI project: data collection, data analysis, improvement plan, creation and implementation, and re-measurement

<http://www.theabr.org/moc-policy#audit>



Where can I get examples of PQI projects?

- ABR website, specialty organizations
- AAPM on-line data of previous meetings

Medical Physics Practice Guidelines

Michael Yeater, Ph.D.
The University of Alabama at Birmingham

PQI: Example Projects for Nuclear Medicine Physics

Sharon L. White PhD
University of Alabama at Birmingham
August 6, 2013

PQI for Radiotherapy Physics



Summary

- PQI is a learning experience**
- No need to cover long periods of time**
- Metrics are appropriate -- and might only be binary**
- The goal is to undertake a project to improve your practice – this is done all the time in common settings – just need to document and attest on myABR**



Questions?

- ABR MOC Services Division
 - abrmocp@theabr.org
 - (520) 519-2152
- www.theabr.org
