
The American College of Radiology

General Radiology Improvement Database

ABR PQI Project Description

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American College of Radiology
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GRID ABR PQI Project Description

Date	Description of Revisions
February 22, 2013	Original issue
April 11, 2014	<u>Section 3.1, Baseline Cycle</u> Clarification of forms required for reporting data
May 1, 2017	<u>Section 2, Administrative</u> (Contact Information changed, Communication with ABR removed)
October 12, 2017	<u>Section 2, Administrative</u> Procedures Revised. <u>Section 3.1</u> Baseline data must be collected during NRDR participation.

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1. Introduction

This document describes how diplomates of the American Board of Radiology (ABR) can use the General Radiology Improvement Database (GRID) as a Practice Quality Improvement (PQI) Improvement Activity towards the fulfillment of their Part IV Maintenance of Certification (MOC) requirements. GRID is a registry developed by the American College of Radiology (ACR) for collecting and aggregating performance indicators from imaging facilities for the purpose of quality improvement. It allows facilities and physicians to compare turnaround times, patient wait times, incident rates and other process and outcome measures with other facilities and practices of similar size and type. Participating facilities record their indicators in GRID on a monthly basis. Every six months, they receive feedback reports comparing their indicators to the aggregate measures of all participants.

Because data for GRID are collected at the facility level, participation will apply to all radiologists and medical physicists at a facility who choose to participate in the project. Certain measures can optionally be reported at the radiologist level. Individual radiologists can conduct projects based on these measures. Measures that can be reported at the radiologist level are noted in Appendix A.

2. Administrative

At the conclusion of the project, the participant may request documentation from the ACR attesting to the fact that the participant contributed data to the registry during the project. The request should specify the participant's NPI, NRDR Facility ID, and the period of time for which attestation is requested. It should be sent to Ryan Keefer at rbkeefe@acr.org.

Information about the ABR's administrative requirements can be found at <https://www.theabr.org/moc-part-4-activities>.

3. Data Collection and Analysis

3.1 **Baseline Cycle**

The following steps describe the process for beginning the first (baseline) cycle:

- Register for GRID participation online, on the National Radiology Data Registry website.¹ Choose one of the measures listed in Appendix A as a basis for the project.
- Decide on a desired measurement target/goal.
- Estimate the predicted baseline measurement result.
- Enter data relevant to the measure selected above in GRID, for a period of six months. This period spans January 1 to June 30, or July 1 to December 31, of a specific year. If the project is a group project, enter "Monthly Data by Facility" for each month of the project. If the project is for an individual radiologist, enter "Monthly Data by Physician" for each month of the project. It is not necessary to enter both forms.

² This optional form contains the structural elements for GROUP PQI Project process record keeping. Separate recording of 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.

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The following steps are performed at the end of the first cycle:

- Collect measurement summary data from the first cycle. This information is available in the semi-annual feedback report loaded to the GRID website every six months.
- Perform baseline data analysis.
- Develop and implement an improvement plan during the following six months.

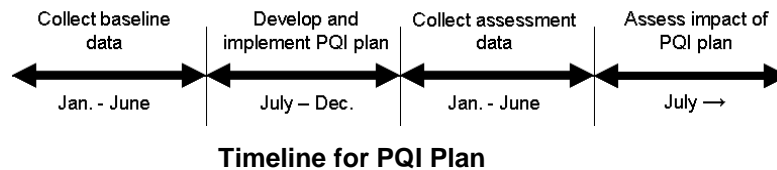
3.2 Post-Improvement Plan Cycle

The following steps are performed before collecting data for the second (post-improvement plan) cycle:

- Determine that the improvement plan has been successfully implemented.
- Reaffirm the measure to be obtained.
- Reaffirm the desired measurement target/goal.
- Estimate the predicted measurement result after implementation of the improvement plan.

The second cycle is completed as follows:

- Enter data relevant to the measure selected above in GRID, for a period six months. This period spans January 1 to June 30, or July 1 to December 31, of a specific year.
- Collect measurement summary data from the second cycle. This information is available in the semi-annual feedback report loaded to the GRID website every six months.
- Perform post-improvement plan data analysis.
- Determine whether the group project has met its performance goal.
- Write a participant self-reflection statement.
- Attest to project completion in the ABR PQI Personal Data Base of each participant.
- Notify the ACR of project completion as described in Section 2 above.



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Appendix A **Measures**

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* Individual radiologists can conduct PQI projects based on these measures.

Process Measures

Patient Wait Time

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month</p> <p>Patient wait time in minutes:</p> <ul style="list-style-type: none"> • Mean • Median <p>Modalities:</p> <ul style="list-style-type: none"> • Radiography • Ultrasound (excluding breast ultrasound) • MRI without oral contrast • CT without oral contrast • PET 	<p>Measure: Mean patient wait time by modality</p> <p>Measure: Median patient wait time by modality</p>

Time from Order to Exam

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month</p> <p>Time from order to exam for inpatient stat CT exams</p> <ul style="list-style-type: none"> • Mean • Median <p>Time from order to exam for inpatient routine CT exams</p> <ul style="list-style-type: none"> • Mean • Median 	<p>Measure: Mean time from order to exam by exam type</p> <p>Measure: Median time from order to exam by exam type</p>

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Reacquisition Rate*

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month Per Physician, Per Month</p> <p>Number of digital radiography exams</p> <p>Number of digital radiography exams that had to be repeated and resulted in additional exposure to the patient</p>	<p>Numerator: Number of digital radiography exams that had to be repeated and resulted in additional exposure to the patient</p> <p>Denominator: Number of digital radiography exams</p> <p>Measure: Percentage of digital radiography exams that had to be repeated and resulted in additional exposure to the patient, by facility and by physician</p>

* Individual radiologists can conduct PQI projects based on this measure.

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Report Turnaround Time*

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month Per Physician, Per Month</p> <p>Report turnaround time</p> <ul style="list-style-type: none"> • Number of exams completed • Number of exams with report signed < 12 hours later • Number of exams with report signed ≥ 12 hours later and < 24 hours later • Number of exams with report signed ≥ 24 hours later and < 48 hours later <p>Modalities:</p> <ul style="list-style-type: none"> • Radiography • Ultrasound (excluding breast ultrasound) • MRI • CT • PET 	<p>Numerator 1: Number of exams with report signed < 12 hours later</p> <p>Numerator 2: Number of exams with report signed ≥ 12 hours later and < 24 hours later</p> <p>Numerator 3: Number of exams with report signed ≥ 24 hours later and < 48 hours later</p> <p>Numerator 4: Number of exams with report signed ≥ 48 hours later</p> <p>Denominator: Number of exams completed</p> <p>Measure 1: Percentage of exams with reports signed less than 12 hours later, by facility, physician and modality</p> <p>Measure 2: Percentage of exams with reports signed between 12 and 24 hours later, by facility, physician and modality</p> <p>Measure 3: Percentage of exams with reports signed between 24 and 48 hours later, by facility, physician and modality</p> <p>Measure 4: Percentage of exams with reports signed more than 48 hours later, by facility, physician and modality</p>

* Individual radiologists can conduct PQI projects based on this measure.

Outcome Measures

Rate of Non-diagnostic Liver Biopsies*

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month Per Physician, Per Month</p> <p>Liver biopsies performed by radiologists</p> <p>Liver biopsies performed by radiologists reported as non-diagnostic</p>	<p>Numerator: Liver biopsies performed by radiologists reported as non-diagnostic</p> <p>Denominator: Liver biopsies performed by radiologists</p> <p>Measure: Percentage of liver biopsies performed by radiologists that were non-diagnostic, by facility and physician</p>

Rate of Non-diagnostic Lung Biopsies*

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month Per Physician, Per Month</p> <p>Lung biopsies performed by radiologists</p> <p>Lung biopsies performed by radiologists reported as non-diagnostic</p>	<p>Numerator: Lung biopsies performed by radiologists reported as non-diagnostic</p> <p>Denominator: Lung biopsies performed by radiologists</p> <p>Measure: Percentage of lung biopsies performed by radiologists that were non-diagnostic, by facility and physician</p>

* Individual radiologists can conduct PQI projects based on these measures.

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Rate of Lung Biopsies Resulting in Pneumothorax Requiring Chest Tube*

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month</p> <p>Per Physician, Per Month</p> <p>Lung biopsies performed by radiologists</p> <p>Lung biopsies performed by radiologists resulting in pneumothorax requiring chest tube</p>	<p>Numerator: Lung biopsies performed by radiologists resulting in pneumothorax requiring chest tube</p> <p>Denominator: Lung biopsies performed by radiologists</p> <p>Measure: Percentage of lung biopsies performed by radiologists resulting in pneumothorax requiring chest tube, by facility and physician</p>

Rate of CT HOCM Extravasation

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month</p> <p>CT exams performed with HOCM</p> <p>Extravasations from CT exams performed with HOCM</p>	<p>Numerator: Extravasations from CT exams with contrast performed</p> <p>Denominator: CT exams with contrast performed</p> <p>Measure: Percentage of CT exams with contrast performed that resulted in extravasation, by facility and contrast medium</p>

Rate of CT LOCM Extravasation

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month</p> <p>CT exams performed with LOCM</p> <p>Extravasations from CT exams performed with LOCM</p>	<p>Numerator: Extravasations from CT exams with contrast performed</p> <p>Denominator: CT exams with contrast performed</p> <p>Measure: Percentage of CT exams with contrast performed that resulted in extravasation, by facility and contrast medium</p>

* Individual radiologists can conduct PQI projects based on this measure.

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Rate of Non-concordant Stereotactic Breast Biopsies*

Data Elements	Clinical Performance Measure
<p>Per Facility, Per Month</p> <p>Per Physician, Per Month</p> <p>Stereotactic breast biopsies performed</p> <p>Stereotactic breast biopsies performed which were non-concordant with imaging findings</p>	<p>Numerator: Stereotactic breast biopsies performed which were non-concordant with imaging findings</p> <p>Denominator: Stereotactic breast biopsies performed</p> <p>Measure: Percentage of stereotactic breast biopsies which were non-concordant with imaging findings, by facility and physician</p>

* Individual radiologists can conduct PQI projects based on this measure.

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Appendix B **Example**

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MOC Part 4: Practice Quality Improvement (PQI)

Group Participant PDSA (Plan-Do-Study-ACT) Checklist & Summary Record²

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.)

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

[GROUP MEETING #1]

- Select a Topic:
 - **Our facility wants to reduce report turnaround time (time from when exam was completed until final report was signed) in order to improve patient care.**
- Define a Measure to be obtained:
 - **Mean turnaround time for CT exams**
 - **While we intend to monitor turnaround time for all exams, for the purpose of this PQI project we are focusing on CT exams.**
- Establish a desired measurement target/goal (What does the group want it to be to achieve an appropriate standard of performance and/or patient care?):
 - **Our target/goal is to be at or below the national mean turnaround time for CT exams. The national mean is the average mean turnaround time of all facilities participating in the General Radiology Improvement Database (GRID).**
- Estimate the predicted baseline measurement result (What does the group think it *will* be?):
 - **We estimate that our turnaround time for CT exams will be 12 hours.**

² This optional form contains the structural elements for GROUP PQI Project process record keeping. Separate recording of 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.

Step 2: **DO.** Baseline Measurement Summary

- Number of Data Points collected :
 - 46,772 CT exams over a six month period
- Baseline Measurement Value calculated:
 - 14.5 hours per exam

Step 3: **STUDY.** Baseline Data Analysis

[GROUP MEETING #2]

- How did the baseline results compare to the predicted results?
The baseline results were higher than predicted
- How did the results compare the desired target goal?
The baseline results were much higher than the GRID average of 9.7 hours per exam.
 - If baseline results *did not* meet the target:
 - Cite Potential Contributing Factors and Root Causes:
 1. Radiologists not using voice recognition software or using it inefficiently.
 2. Radiologists giving priority to other types of exams.
 3. Reports not always marked as complete when in fact they are.
 - Proceed to Step 4.

If the baseline results unexpectedly *did* meet or exceed the desired goal, return to Step 1 to select a new project and begin a new PDSA process. Complete Steps 9 and 10 as appropriate. Alternatively, review the baseline results for other eligible measures in need of improvement. Continue the project with Step 4, using one of these measures as a target for improvement. Eligible measures, listed in Appendix B, are those that have been approved by the ABR for use in a GRID PQI project.

Step 4: **ACT.** Improvement Plan Development

- Discuss and adopt actions to address Contributing Factors and Root Causes
 - Implement more intensive training on the use of voice recognition software
 - Implement a more efficient workflow process

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- *Construct* an Improvement Plan based on these findings and a process by which to implement the plan. Determine an appropriate time interval after plan implementation to allow for the plan to have its desired effect. Then proceed with re-measurement to assess improvement in Cycle #2.

Improvement Plan:

- Review and adjust process for completing reports
 - Select a committee to review process
 - Committee meets and provides recommendations
 - Recommendations are implemented
- Encourage more widespread and efficient use of voice recognition software
 - Interview radiologists about possible problems with the software
 - Improve training on use of the software

POST-IMPROVEMENT PLAN PDSA CYCLE (Cycle #2)

(In Cycle #2, re-measurement is performed after implementation of the Improvement Plan developed in Cycle #1.)

Step 5: PLAN

- Determine that the Improvement Plan constructed in Cycle #1 has been successfully implemented.
 - All steps of the Improvement Plan has been successfully implemented
- Reaffirm the Measure to be obtained.
 - Mean turnaround time for CT exams
- Reaffirm the desired measurement target/goal (What does the group *want* it to be?):
 - Our target/goal is to be at or below the national mean turnaround time for CT exams. The national mean is the average mean turnaround time of all facilities participating in the General Radiology Improvement Database (GRID).
- Estimate predicted measurement result *AFTER* implementation of the Improvement Plan (What does the group think it *will* be?):
 - We think that it will be 9.7 hours which was the GRID average on the last report.

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Step 6: DO. Repeat Measurement Summary

- Number of Data Points Collected:
 - 48,102 CT exams over a six month period
- Re-measurement Value obtained:
 - 9.3 hours per exam

Step 7: STUDY. Re-measurement Data Analysis

[GROUP MEETING #3]

- How did the measurement results compare to the predicted results?
 - Our results were better than predicted (predicted=9.7 hours; actual=9.3 hours)
- How did the results compare the desired target goal?
 - Our results were better than the target goal (target=GRID average of 9.7 hours; actual=9.3 hours)
- If results **did not** meet the target:
 - Re-evaluate the Improvement Plan by determining any problems with the plan design or its implementation, including issues preventing root causes from being addressed effectively.
 - Has the target/goal been set too high? Is an adjustment in order?
 - Is the measure the correct one?
 - Are modifications to the improvement plan warranted?
 - Proceed to Step 8.
- If results **did** meet or exceed the target: Proceed to Step 8

Step 8: ACT. PROJECT DECISION POINT

[GROUP MEETING #4]

- Determine whether the group project has met its performance goal.
 - **Yes, we have met the target goal**
 - If “yes,” adopt the improved practice process as a standard and proceed to a new PQI Project.
 - If “no,” proceed with additional PDSA cycle(s) as needed to adjust the improvement plan or the measure target/goal. Continue the existing project either until the goal is met or an end-point is otherwise determined. *(Any improvement identified through this process is an indication of success and in some cases, the magnitude of improvement in*

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the project measure achieved may be all that can be reasonably expected.)

Step 9: Participant Self-Reflection Statement:

(This brief narrative completes the quality improvement process. The PQI participant records his/her reflections on the project, improvements in quality/safety to which it has led, and its overall value to the practice or patient care.)

We feel that this exercise has led to an improvement in our ability to report the results of CT exams in a timely manner. Implementation of the improvement plan resulted in reduced turnaround times for other types of exams as well. We will continue to monitor our turnaround times through GRID.

Step 10: Each Group PQI Participant Must Attest to Project Completion his/her ABR Personal Data Base.³

³ www.theABR.org

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Appendix C **Abbreviations**

ABR	American Board of Radiology
ACR	American College of Radiology
CT	Computed tomography
GRID	General Radiology Improvement Database
HOCM	High Osmolar Contrast Medium
LOCM	Low Osmolar Contrast Medium
MOC	Maintenance of Certification
NRDR	National Radiology Data Registry
PDSA	Plan-Do-Study-Act
PET	Positron Emission Tomography
PQI	Practice Quality Improvement

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