Oncologic 18F-FDG PET/CT Report Completeness Practice Quality Improvement (PQI) Template
Goal: to improve oncologic 18F-FDG PET/CT report completeness
With direct reference to the template provided by the ABR at
http://www.theabr.org/moc-dr-comp4

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Supporting Organization: Society of Nuclear Medicine and Molecular Imaging (SMNMI), PET Center of Excellence

Approval: Qualified by the American Board of Radiology in meeting the criteria for practice quality improvement (PQI), toward the purpose of fulfilling requirements in the ABR Maintenance of Certification Program.

Baseline Cycle (Cycle #1)

Step 1: Plan. Identify and Describe the Project. (Group Meeting #1)

Topic of interest: Oncologic 18F-FDG PET/CT Report Completeness.

Explanation: The written radiology report is the primary means of communication between interpreting and referring physicians. The report is part of the permanent medical record, and often plays a role in billing, medicolegal proceedings, and demonstrating regulatory compliance. PET/CT, as a hybrid modality, requires relatively complex reports, therefore report completeness can present more of a challenge. A summary article on this topic is: Niederkohr RD, et al. "Reporting Guidance for Oncologic 18F-FDG PET/CT Imaging." J Nuc Med 2013. 54(5): 756-61.

Define the measurements to be taken:

#	Category	Report Element	Present/Absent
1	Clinical history	Indication for the study* *"Present" requires an indication (e.g. "to guide Initial treatment strategy"); if a cancer has been diagnosed, the site and type of cancer, and if treatment has been administered, a brief treatment history.	Present/Absent
2	Technique	Radiopharmaceutical name (e.g. 18F-FDG, FDG)	Present/Absent
3	Technique	Radiopharmaceutical dose/activity in mCi or MBq* *"Present" requires an exact number measured and rounded to the nearest MBq (e.g. 373 MBq) or nearest tenth of a mCi (e.g. 9.2 mCi). Rounding more than this or using an approximate number entered as part of a template is not acceptable.	Present/Absent
4	Technique	Route of radiopharmaceutical administration (e.g. IV)	Present/Absent
5	Technique	Uptake time (time from radiopharmaceutical injection to imaging) in minutes* *"Present" requires the exact time measured to the nearest minute. A number	Present Absent

		rounded to the tens digit or an approximate number entered as part of a template is not acceptable.	
6	Technique	Blood glucose level in mg/dL or equivalent units	Present/Absent
7	Technique	Precise body region scanned	Present/Absent
8	Technique	Description of the CT performed* *"Present" requires reporting the presence or absence of IV/PO contrast, and if given, the agent/dose/route.	Present/Absent
9	Comparisons	A comparison with date is listed or "none available" is indicated.	Present/Absent
10	Findings/ Impression	Clearly labeled, separate Findings and Impression sections are present	Present/Absent

In jurisdictions requiring radiation dose reporting, reporting to the required standards may be added as an 11th element.

Establish a desired measurement target/goal:

We aim for all PET/CT reports to be ≥90% complete.

We will measure 25 consecutive PET/CT reports for each reader in our practice, beginning on this date: []. Each report will be scored for the above 10 elements. A reader will meet the goal if all 25 reports have at least 9 of the 10 elements.

Estimate the predicted baseline measurement result:

Our group estimates that most PET/CT readers will have [] out of 25 reports at or above the threshold of ≥90% complete.

Step 2: Do. Baseline Measurement Summary

Report and summarize results via the provided Excel spreadsheet for each reader.

Summarized Results:
Reader 1: [] out of 25 reports were ≥90% complete
Reader 2: [] out of 25 reports were ≥90% complete
Reader 3: [] out of 25 reports were ≥90% complete
…

Step 3: STUDY. Baseline Data Analysis (Group Meeting #2)

How did the baseline compare to the predicted measurement results?

Most PET/CT readers had [] out of 25 reports at or above the threshold of ≥90% complete, which is [more/fewer] than expected.

There were tends in the deficiencies as a group, specifically [], and there were trends for some specific readers, specifically [].

How did the results compare to the desired target goal?

1. If baseline results did not meet the target, cite potential contributing factors/ or root causes and proceed to Step 4.
2. If the baseline results met or exceed the desired goal, complete Steps 9 and 10 as appropriate. Then return to Step 1 to select a new project.

Step 4: ACT. Improvement Plan Development

Discuss & adopt actions to address contributing factors and/or root causes such as:

1. Hold a group meeting to discuss acceptable reporting standards, including a discussion of the required elements and how they may be important for billing, recording, and communication.
2. Review templates used in voice recognition programs. Put in example text or instructions to improve compliance. If an example uptake time and/or FDG dose is included in the template and it results in readers not updating the number(s), replace them with blank fields.
3. Send reminder emails to all PET/CT readers
4. Have staff spot check reports for completeness, with emails sent to readers of incomplete reports.
5. Discuss report completeness goals with colleagues.
6. Provide incentives for report completeness.

Based on these findings, construct an improvement plan and a process by which to implement this plan. The time needed to implement this plan is estimated to be [] hours spread out over [] days/weeks. Proceed with re-measurement, once the improvement plan has been implemented, to assess improvement.

Post-Improvement Plan Cycle (Cycle #2)

STEP 5: PLAN (Group Meeting #3)

Determine that the improvement plan constructed in Cycle #1 has been successfully implemented.

Reaffirm the measurements to be taken:

See the table from "Cycle 1".

Reaffirm the desired measurement target/goal:

See the goal from "Cycle 1", consider changing, if appropriate.

Estimate the predicted measurement result after implementation of the improvement plan:

After Cycle 1 and the first improvement plan, we anticipate that most PET/CT readers will have [] out of 25 reports at or above the threshold of ≥90% complete.

Step 6: Do. Repeat Measurement Summary

Report and summarize results via the provided Excel spreadsheet for each reader.

Summarized Results:
Reader 1: [] out of 25 reports were ≥90% complete
Reader 2: [] out of 25 reports were ≥90% complete
Reader 3: [] out of 25 reports were ≥90% complete
…

Step 7: STUDY. Re-measurement Data Analysis (Group Meeting #4)

How did the measurement results compare to the predicted results?

Most PET/CT readers had [] out of 25 reports at or above the threshold of ≥90% complete, which is [more/fewer] than expected.

There [were/were not] tends in the deficiencies as a group, specifically [], and there were trends for some specific readers, specifically [].

How did the measurement results compare to the desired target goal?

ALL PET/CT readers in our practice [did/did not] meet the goal of all 25 reports being ≥90% complete.

If the results did not meet the target:

1. Re-evaluate the improvement plan by determining any problems with the plan's design or its implementation, including issues preventing root causes from being addressed effectively.
2. Has the target/ goal been set too high? Should this be adjusted?
3. Is the measure of report completeness being done correctly?
4. Should the improvement plan be modified?
5. Proceed to step 8.

If the results did meet or exceed the target, proceed to step 8.

Step 8: ACT. Project Decision Point

Determine if the group project has met its performance goal.

1. If "yes", adopt the improved practice process as a standard and choose a new PQI project.
2. If "no", repeat additional cycles of this project as needed to adjust the improvement plan or the measurement target/ goal. Continue the existing project either until the goal is met or an end-point is otherwise determined.

Step 9: Participant Self-Reflection Statement.

Each PQI participant should record his or her reflections on the project, improvements in quality and/or safety as a result of the project, and its overall value to the practice or patient care.

Step 10: Attest Completion.

Each Group PQI Participant must attest to project completion on his or her myABR Account (https://myabr.theabr.org/login)

<u>Appendix: Example of a complete ^{18}F-FDG PET/CT Report</u>

Whole body ^{18}F-FDG PET/CT dated 10/1/2012

Clinical History: 59-year-old man diagnosed with a right upper lobe adenocarcinoma of the lung in 11/2011, post right upper lobectomy and lymph node dissection in 1/2012. Restaging exam.

Comparison: 12/05/2011 PET/CT

Technique: 373 MBq (10.1 mCi) of ^{18}F-FDG were administered intravenously via the right antecubital vein. The blood glucose at time of ^{18}F-FDG injection was 108 mg/dL. 65 minutes after injection, PET and CT images were acquired from the vertex through the upper thighs. CT images were acquired using a diagnostic level mA after the injection of 100 ml of iohexol via the right antecubital vein.

Findings:

[Findings]

Impression:

[Impression]