QIBA fMRI Biomarker Committee (BC) Call
Wednesday, February 7, 2018 at 11 AM CT
Call Summary

In attendance
Jay Pillai, MD (Co-chair) Ted DeYoe, PhD Yunhong Shu, PhD Joe Koudelik
David Soltysik, PhD (Co-chair) Nancy Obuchowski, PhD Susan Weinmann

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Review of Previous Call Summary
- The 01.24.18 call summary was approved as presented

QIBA Checklist: fMRI Center of Mass Estimation for presurgical Assessment (fMRI-CMA)
- With help from Drs. Elsinger, Pillai and Soltysik, and using the CT Volumetry checklist as a reference, Dr. Mohamed drafted an fMRI checklist which can be found on the QIBA Wiki at:
  http://qibawiki.rsna.org/images/3/35/QIBA_CVol_TumorVolumeChangeChecklist-20161205_-_Field_Test_version_1.0.docx
- Overall rationale for the checklist and how fMRI BC plans to address general comments regarding Profile v1.0 was explained by Dr. Pillai
  - Dr. Elsinger will be triaging the low, medium and high priority comments for committee review
- Differing requirements for site conformance vs. actor conformance discussed, e.g. sites required to generate test-retest data
- Assessment procedures divided into subsections by actor type; each actor to have required performance tests to pass to prove conformance
- Method-to-measure conformance to be provided
- The Profile user needs to:
  - Be able to acquire data from the scanner that matches the QA measurement data within QIBA Profile specifications
  - Demonstrate that center-of-mass calculation is within QIBA Profile specifications (can be assessed using DROs rather than acquired empirical data)
  - Assess bias and repeatability using the data provided
- Focus of discussion was on computing Center of Mass of Activation (CMA) repeatability
- Statistical assumptions underlying current fMRI Profile v1.0 Claims:
  - Certain repeatability is assumed
  - There is no bias in determination of center of mass
- Two stages of feasibility-testing:
  - Sites test Claims
  - Manufacturer tests to see if scanner is conformant
As action items for future discussion by the fMRI BC committee, Dr. Pillai suggested the following in order to complete the checklist draft:

- Need to determine consensus methodology for selection of an appropriate ROI for primary motor activation per current Profile claims
- Need to determine the optimal statistical thresholding approach to include, e.g. 50-60% AMPLE normalization suggested
- Need to determine acceptable within-subject repeatability metrics, e.g. 5mm variability between subjects has been suggested

Next calls:
- QIBA fMRI Bias TF call – Tuesday, February 13, 2018 at 1 PM CT—focus will be on continuation of discussion of the checklist (Dr. Voyvodic will discuss some of his motor reproducibility data in this context)
- QIBA fMRI Biomarker Committee call – Wednesday, February 21, 2018 at 11am CT

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