QIBA fMRI Biomarker Committee (BC) Call

Wednesday, April 19, 2017 at 11 AM CT

Call Summary

In attendance			**RSNA**
James Reuss, PhD (Co-Chair)	Nancy Obuchowski, PhD	James Voyvodic, PhD	Joe Koudelik
Andrew Kalnin, MD	Jay J. Pillai, MD	Zhiyue Jerry Wang, PhD	Susan Weinmann
Feroze Mohamed, PhD	David Soltysik, PhD		

Review of Previous Call Summary

- The 4.5.2017 call summary was approved as presented

fMRI Profile v1.0 draft (All)

- To support concurrent access and editing, the fMRI Profile v1.0 is on Google docs at: https://docs.google.com/document/d/1M8XywlKVYSl9_SXfmvkPzVdnunVTXHwc3CdnqFTrsCw/edit?usp=sharing
- Vote-to-release e-ballot, sent out to eight fMRI BC eligible voters, closed with 6 “Yes” and 1 “No”, thus approving Profile release
- Next step is the MR CC e-ballot vote-to-release process
- Discussion continued on Section 4: Assessment Procedures
- Focused on 4.5.1 Assessment Procedure: fMRI Center-of-Mass Reproducibility (Claim)
    - Link to the Quantitative Imaging Data Warehouse (QIDW) at: http://qidw.rsna.org/ included for data sets to help assess performance, or conformance to the Claims of this Profile
    - Dr. Voyvodic’s DROs are posted to the QIDW in to help evaluate imaging site post-processing performance as well
    - 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
        - know what criteria to use to distinguish between good and bad scans
        - assess bias and repeatability using the data provided
        - be able to asses bias
    - 30 within and across-day test-retest pairs of datasets using the hand movement task specified in Appendix D (the datasets used to establish the Claims of this Profile will be made available through the QIDW)
        - This 30 sets of test-retest pairs will meet the profile criteria for acceptable data
        - An additional group of cases that intentionally do not meet profile criteria will also be provided
    - Discussion on what kind of DROs to generate and how to use them to test conformance
    - Profile must specify how to assess Actor ability to make measurements within specific clinical limits
    - If someone downloads and performs analysis, they will have access to activation method
        - Most software not designed to create center-of-mass activation numbers
        - With a good dataset, user would get an answer within the range specified in the Profile
        - Datasets to be generated

- Discussion on to what extent conformance can be achieved in the presence of noise
    - Discussion on the amount of noise that would disqualify datasets

- DRO goal is to find out if performance plan is feasible
  Please note: the following was suggested on January 25, 2017 call,
    - Create a DRO that has 20-30 cases based on fMRI BC specifications (as opposed to user trying to differentiate bad & good ones)
    - Datasets that are known to achieve Claim to be used
    - Step-by-step assessment/procedure to be written
    - Generate a range of DROs where fMRI will get the desirable center of mass (every DRO should be a good subject)
    - fMRI Profile to determine whether methods are good or bad, not whether data is good or bad

Next calls:

- QIBA fMRI Bias TF call - Tuesday, April 25 at 10am CT
- QIBA fMRI Biomarker Committee call – Wednesday, May 3 at 11am CT