

## QIBA fMRI Biomarker Committee (BC) Call

Wednesday, March 21, 2018 at 11 AM CT

Call Summary

### In attendance

*Feroze Mohamed, PhD (Co-chair)*

*Jay Pillai, MD (Co-chair)*

Ted DeYoe, PhD

Cathy Elsinger, PhD

Ping Hou, PhD

Edward Jackson, PhD

Andrew Kalnin, MD

Nancy Obuchowski, PhD

Flavius Raslau, MD

Yunhong Shu, PhD

James Voyvodic, PhD

Zhiyue Jerry Wang, PhD

### RSNA

Joe Koudelik

Susan Stanfa

### Review of Previous Call Summary

- The 03.07.18 call summary was approved as presented

### QIBA Checklist: “fMRI Center of Mass Estimation for Pre-surgical Assessment (fMRI-CMA)”

- Discussion focused on review of the Claim-conformance checklist and updates to be made
- In efforts to increase feasibility for most actors, a simple validation checklist using a single pair of DROs (which more sites are likely to do) will be included
- In addition, a complete validation checklist using 30 pairs of DROs (which is something that fMRI software vendors should be motivated to complete, or make possible to complete, in order for their software to be QIBA-conformant) to be developed as a separate validation/conformance process
- To understand the requirements for sites, it would be helpful to review the Assessment Guidance document, created by the QIBA Process Committee, located on the QIBA Wiki at:  
[http://qibawiki.rsna.org/index.php/Assessment\\_Procedure\\_Guidance](http://qibawiki.rsna.org/index.php/Assessment_Procedure_Guidance) and focused on the following:
  - 1: How to assess sites for conformance (not as relevant to the QIBA Profile as individual Actors)
  - 2: Assessing individual Actors, which relates to the statistical assumptions that underlie Profile Claims; fMRI assumptions that need to be validated:
    - There is no measurement bias
    - There is a standard within-subject deviation across subjects less than 2.5
- Requirements for assessing individual actors are included in Section 3 of the fMRI Motor-Mapping Profile (e.g. minimal performance requirements and sample size), while procedural instruction is in Section 4
- For the checklist, all Profile users need to be able to:
  - Download a set of DROs
  - Determine the center of mass of activation for each DRO
  - Calculate the within-subject standard deviation across subjects
  - Determine if the value meets the Profile Claim
- The checklist would be sent to all Actors (e.g. techs, radiologists, physicists, etc.) for feasibility testing to understand whether each requirement is practical for achieving the Profile Claims
- Assessment procedures are divided into subsections by actor type; each will have to conduct required performance tests to demonstrate conformance and will choose from the following responses:
  - Routinely performed
  - Feasible, will do to conform
  - Feasible, but not going to do it
  - Not feasible (explain why)

- A 5<sup>th</sup> optional checkbox would allow Actors respond if their “assigned performance task” was overseen by another Actor, e.g. if a task for a physicist was routinely addressed by a technologist, etc.
- Downloading 1 DRO would demonstrate the ability to run the algorithms; all Actors besides image analysis software vendors will not be presented with the requirement to analyze 30 pairs of DROs
- QIBA groups are welcome to use existing checklists as templates and are free to modify them as needed
- Assessment validation to be discussed during April 4 t-con

**Next calls:**

- QIBA fMRI Bias TF call – Tuesday, March 27, 2018 at 1 PM CT
- QIBA fMRI Biomarker Committee call – Wednesday, April 4, 2018 at 11am CT

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