

## QIBA fMRI Biomarker Committee (BC) Call

Wednesday, June 3, 2020 at 11 a.m. (CT)

### Call Summary

#### In attendance

Feroze Mohamed, PhD (Co-chair)

David Soltysik, PhD (Co-chair)

Mai-Lan Ho, MD

Ichiro Ikuta, MD, MMSc

Ho-Ling (Anthony) Liu, PhD

Nancy Obuchowski, PhD

Yuxiang Zhou, PhD, DABR

#### RSNA staff

Joe Koudelik

Julie Lisiecki

#### Review of Previous Call Summary

- The 05.20.2020 call summary was approved as presented

#### Update:

- Comments for the motor-mapping Profile have been addressed, and it was decided that there was insufficient enthusiasm to pursue technical confirmation
- Instead, the group decided to pivot from motor-mapping (v1.0) to a language-mapping (v2.0) Profile using the motor-mapping Profile as a template to fast-track Profile drafting
- There is also an effort to obtain software that may aid with technical confirmation for both Profiles

#### Language Profile (v2.0):

- Dr. Liu noted that more data are needed, and the BC should continue searching the literature for papers on localization
  - More information is needed for laterality approaches and reproducibility
  - No one on the call had any data on language fMRI to explore the language laterality index
  - Dr. Mohamed suggested that the group ask Dr. Voyvodic about his data on the next call

#### Factors to keep in mind:

- With post-processing for language fMRI, ROI location may be challenging with additional areas
  - Need to specify which clusters will be reviewed
  - Localization data is the most important
- Need to acquire more data to add to the clinical case inclusive of both clinical and normative fMRI data
  - Dr. Obuchowski suggested that at least 30 subjects (and 30 controls) would be needed for a power analysis
- The study would need to be done twice and would likely require a total of 120 session scans
  - The group thought this study could potentially be completed in a year
  - A multi-site study with different scanner platforms was recommended to obtain better reproducibility data
    - Dr. Liu has access to GE and Siemens platforms, though he primarily uses the GE 150
    - Dr. Ikuta has access to Siemens with DynaSuite Neuro, though he noted that this lacks a laterality index
    - Obtaining right-hemisphere dominant data will be difficult, as it is rare (<5% of population)

- Dr. Obuchowski suggested that the average within-subject coefficient of variation (wCV) for a representative sample would be sufficient
  - A random sample of 30 patients across 5-10 sites would be acceptable (wCV from each site would be very informative)
  - Another suggestion was to have 30 sites with at least one case each, though that would be more challenging
- A joint grant proposal was suggested to obtain additional data
  - Drs. Mohamed and Liu to initiate this effort but would like someone else to be the lead point person
  - An RO3 grant was suggested as a promising mechanism
- Dr. Voyvodic was primarily testing AMPLE data previously but the group wondered if he might be able to use this data to investigate laterality as well

**Action items:**

- Drs. Mohamed and Liu to begin initial RO3 grant investigation
- Dr. Mohamed to follow up with Dr. Voyvodic regarding data availability for laterality studies

**Next call:** Wednesday, June 17, 2020 at 11 a.m. CT (1<sup>st</sup> & 3<sup>rd</sup> weeks of each month)

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