QIBA fMRI Biomarker Committee (BC) Call

Wednesday, January 11, 2017 at 11 AM CT

Call Summary

In attendance

Ted DeYoe (Co-Chair)

James Reuss, PhD (Co-Chair)

David Black, MD

Scott Faro, MD

Cathy Elsinger, PhD

Andrew Kalnin, MD

Feroze Mohamed, PhD

Nancy Obuchowski, PhD

Jay Pillai, MD

David Soltysik, PhD

Zhiyue Jerry Wang, PhD

Kirk Welker, MD

RSNA

Joe Koudelik

Susan Weinmann

Review of Previous Call Summary

- The 12.14.2016 call summary was approved as presented

Review of ASFNR Paradigm Selection & Testing (Drs. Black, Faro, Welker, et al.)

- The **ASFNR standards project** was presented by Dr. Black
- Goal is to increase awareness concerning variability in the current practice of fMRI for presurgical planning, addressing limits to validity, clinical utility, and overall progress in the field
- At this time, fMRI post-processing is not being included due to complexity
- Concerned with clinical impact which may lead to reimbursement
- One goal is to progress toward standardization by converging clinical practice on standard language **paradigms** (the clinical analog to **OHBM's COBIDAS white paper**).
- Taskforce Members:

  - David F. Black, MD
  - Jay J. Pillai, MD
  - Scott H. Faro, MD
  - Jeffrey R. Petrella, MD
  - Behroze Vachha, MD, PhD
  - Asim Mian, MD
  - Mohit Maheshwari, MD
  - Haris Sair, MD

- Methods/Process:
  - 21% of Taskforce members and ASFNR membership responded to a poll
  - Discussions on teleconference or through email included the following topics:
    - Balancing standardization with customization
    - Most adoptable combination for the majority
    - Balance of laterality and localization
    - Balance preference with scientific evidence
    - Adult and pediatric variations

- Poll Results:
  - Number of fMRIs performed per month for language assessment at different institutions (about 1/3 of responders do 6+ per month)
  - Likelihood of adopting guidelines:
    - Very likely: 30
    - Uncertain: 19
    - Unlikely: 4

- Items discussed but will NOT be included:
    - Standardized post-processing
    - Standardized color schemes for each task
    - Laterality indices

- Adult language task algorithm
    1. Sentence Completion (SC)
    2. Silent Word Generation (SWG)
    3. Choose best 3rd Task for a given patient:
        - Default > Rhyming (R)
        - Repeat Task > Sentence Completion (SC)
        - Impaired Adult > Object naming (ON) or Passive Story Listening (PSL)

- Pediatric Language Task Algorithm
    1. Sentence Completion (SC)
    2. Rhyming (R) [if R not possible, > Passive Story Listening (PSL)]
    3. Antonym Generation (AG)

- A breath hold paradigm will be included but will not be part of the recommended algorithm (this will be a softer recommendation)
- AJNR submission writing nearly complete, but some literature review on two paradigms is pending, and creation of vendor agnostic content just began
- Consistency of sites and protocols from imaging to analysis is critical for standardization; Drs. Faro & Black to strive toward harmonization by working with the fMRI BC
- User-friendly system with practical application across the country is needed

fMRI Profile v1.0 draft
- 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**
- Conformance statement to be completed for review

Next calls:
- QIBA fMRI Bias TF call - Tuesday, January 17 at 10am CT
- QIBA fMRI Biomarker Committee call – Wednesday, January 25 at 11am CT