QIBA fMRI Biomarker Committee (BC) Call
Wednesday, August 22, 2018 at 11 AM CT
Call Summary

In attendance
Feroze Mohamed, PhD (Co-chair)  Ping Hou, PhD  Uma Ranjan, MSc, PhD
Jay J. Pillai, MD (Co-chair)      Andrew Kalnin, MD  Flavius Raslau, MD
Christopher Conklin, PhD        Nancy Obuchowski, PhD  Jim Voyvodic, PhD
Cathy Elsinger, PhD

RSNA staff
Joe Koudelik
Susan Stanfa

Review of Previous Call Summary
- The 08.08.18 call summary was approved as presented

fMRI Profile 1.0 Update (Elsinger)
- Dr. Elsinger continues to address public comments and is working with Dr. Fedorov on co-registration issues

Summary of Motion DRO Results (Dr. Voyvodic)
- Results from a re-analysis of motion DROs were presented
- This was the third DRO design iteration due to the discovery of differences in methods used to create data and correct for motion among different testing sites
- Two different DROs were created to simulate motion: block and event design
- Analysis method/procedures were explained
- Both language and motor tasks were included in the block design; only motor tasks were used for event-based design
- Distribution of signal activation intensity was spatially-derived from human subjects
- Activation maps were generated, which in turn generated statistical maps of t-values from General Linear Model (GLM)
- FSL, SPM and AFNI fMRI software were used
- 999 samples of empirical head motion were used: each sample had 6 degrees of motion (3 trans, 3 rots) for each of 22 slices, for 150 time points
- Block-design tasks (Round 4 DROs): 6,700 DROs were generated and analyzed, with and without a motion correction option, also generated by censoring out (omitting images with in-volume motion) short periods of intense motion
- Many motion metrics were tried, but ultimately used were: assessment of frame-to-frame motion within TR and conditional change where some motion is relative to a fixed average
- Metrics that can be applied without known truth are needed
- Dr. Voyvodic hopes to publish the DRO analysis results
- Event-design tasks (Round-5 DROs) to be discussed during an upcoming fMRI BC call

Next calls:
- QIBA fMRI Bias TF call – Tuesday, August 28, 2018 at 1 PM CT
- QIBA fMRI Biomarker Committee call – Wednesday, September 5, 2018 at 11am CT

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