

QIBA fMRI Subcommittee Update Call  
Wednesday, Sept 08, 2010 at 11 am CDT

Call Summary

In attendance  
Cathy Elsinger, PhD (Co-chair)  
Jeffrey Petrella, MD (Co-chair)  
Andrew Buckler, MS  
Edward DeYoe, PhD  
Feroze Mohamed MD  
Jay J. Pillai, MD  
James L. Reuss, PhD

Daniel C. Sullivan, MD  
Douglas M. Tucker, PhD, MBA  
James T. Voyvodic, PhD

RSNA  
Fiona Miller  
Joe Koudelik

**fMRI-DICOM Working Group Update (Dr Tucker)**

- Need additional workflow documents to help validate what's in-hand now
- Small subgroup meeting proposed to discuss next steps and report back to the fMRI main group
- Drs DeYoe and Pillai to forward workflows; October 1 proposed deadline
- Dr Elsinger to send targeted email reminder to help gather workflows
- Dr Elsinger to compile responses into one high-level document
- Dr Reuss to send workflow framework to Dr Elsinger (may be non-clinician needs-specific)
- QIBA Profile to benefit from vendor input, beyond DICOM input; fMRI system vendors need guidance;

**QIBA Steering Committee Strategic Planning Meeting**

- Dr Elsinger attended 8/27 meeting in Chicago and found it very useful
- Learned cte function, history and operations of QIBA
- Agenda focused on future and five-year goals
- Presentations made by all stakeholders: equipment vendors, pharmaceutical industry, academia, government, etc; Dr Elsinger will distribute meeting summary once complete
- Discussions revolved around governance, committee structure and decision-making processes will proceed
- A follow-up f2f meeting possible for October 2010

**NIBIB funding contract update**

- Process being developed to apply for funding; process needed to provide funds for overall efforts (e.g. meeting costs, etc) and portion of projects associated with individual subcommittees
- Priority may be given to complete ongoing efforts
- QIBA largely a volunteer effort, so funding shouldn't alter nature of QIBA efforts
- Committee co-chairs to communicate to committee members through update calls, etc

**RSNA 2010 Poster Material**

- Meet-the-Experts (lunchtime hours) and manning the posters proposed for RSNA Annual Meeting
- All MTE times will be published and advertised; no formal presentations needed
- Poster could focus on project status, Profile Claims development and accumulated data to-date
- The QIBA Process: Good PR activity
- Workflow and DICOM process focus – recommended workflows; good way to get feedback

**Repeatability of fMRI Results (Dr DeYoe)**

- Need future (5-10 year) goals
- Focus on outcome measures (reliability, reproducibility and accuracy)
- Motor tasks to be 1<sup>st</sup> approach
- Dr DeYoe's presentation slide discussed; new way to look at functional reproducibility
- Could possibly feed into project proposal (for NIBIB contract funding)
- Research-oriented issues may be pushed here; Drs DeYoe and Voyvodic could pursue technical issues while committee works on parallel broader/higher issues
- Current process for field mapping discussed; visual stimulus and temporal phase mapping analysis discussed

- Functional specificity and repeatability of voxels in visual cortex discussed
- Aside from sources of variability associated with time, plot shown repeatable voxel assignment
- Repeatability has two issues to address:
  - Spatial dimension
  - Functional reproducibility

### **Methodology vs. Brain Regions**

- Brain regions to be focus of fMRI trials, thus allowing for neuron reorganization
- Clinical relevance to decision making often deals with functional area and extent (i.e. location and extent)
- FBIRN study has already addresses machine vs. methodology issues
  - Machine factor found of minimal concern; machine-based fluctuations almost non-existent
  - Methodology issues found more broad
- Neuro-behavioral measurements needed for long-term imaging; design of repeatability measures need behavioral controls
- Clinical trials may be long-term goal
- Current scope is to study machine vs methodology variability
- Phantom study considered in parallel to biological work; need to use healthy human phantoms for repeatability studies in general
- Discussion to be continued on 10/6 call

### **Profiling Activities**

- Main fMRI Subcommittee goal is to develop fMRI Profile; writing group to further develop fMRI Profile
- Research side to explore reproducibility and accuracy
- Data analysis issues require additional discussion, e.g. more call time
- Subgroup needs defined projects
- Dr Voyvodic to lead a working group focusing on fMRI reproducibility in terms of Profile Claims
  - To host working group call before next fMRI SubCtte call on Oct 6, 2010

### **Next Steps:**

- List potential ideas for RSNA 2010 posters; 1 poster confirmed
- Dr Voyvodic to host working group call before next fMRI SubCtte call on Oct 6, 2010
- Next call scheduled for Oct 6, 2010 at 11 am CDT