

QIBA fMRI Subcommittee Update

Wednesday, February 10, 2010

11 AM CST

Call Summary

In attendance:

Cathy Elsinger, PhD (co-chair)
Rasmus Birn, PhD
Bradley Buchbinder, MD
Paul Bullwinkel, PhD
Ted DeYoe, PhD
Srini Mukundan, PhD, MD
Jeffrey Petrella, MD

James L. Reuss, PhD
Daniel C. Sullivan, MD

RSNA

Fiona Miller
Susan Anderson, MLS
Joe Koudelik

Future Meeting – f2f Meeting during ASFNR meeting

- Drs Elsinger and Roberts to follow-up off-line concerning possible f2f during the February AFSNR meeting in Las Vegas; a Wednesday lunchtime meeting under consideration

Identification of fMRI Co-chairs

- Open to suggestions for possible interest by clinicians/academicians with vested interest

Profile Claims Development Overview (Dr DeYoe Comments)

Overview of Dr DeYoe's Claim Comments posted on QIBA Wiki at:
http://qibawiki.rsna.org/index.php?title=Profile_Development

Claims must address practical needs of radiologists and neurosurgeons

- Claims 1-3: Set context in sense of overall issues
- Claim 2: More specific and involves paradigm design
- Claim 3: More responsive

Claims 2 & 3: Condition and Criteria

- What QIBA might address; QIBA role is not paradigm design or pathway evaluation, but rather establishing condition and criteria by which these can be judged based on expert consensus and evidence-based guidelines
 - A-Technical level; how fMRI is to be done
 - B-Paradigm design in behavioral sense to activate brain regions (outside QIBA scope)
 - C-Move toward clinical relevance; how much brain region contributes to patient function
 - D-Clinical interpretation; clinical research and what physicians are faced with
- QIBA to help address paradigm design and technical/practical appropriateness for fMRI or valid biomarker of brain function,
- QIBA initiative cannot cover option C and D in terms of scope

Profile Claims Development Overview (Dr Tucker Comments)

Overview of Dr Tucker's Claim Comments posted on QIBA Wiki at:
http://qibawiki.rsna.org/index.php?title=Profile_Development

- QIBA Profile Claims to focus on developing set of guidelines to help guide fMRI for clinical use
- Need to be clear where fMRI fits with other technologies as an aid in therapy and surgery
- QIBA goal to focus on development and translation of new technologies

- ACR guidelines for fMRI recently posted; fMRI paradigms used; many similarities between both documents
- ACR guidelines cover numerous processes for fMRI are very general, with minimum “practice guidance”
- Meta-study leading to discussions needed
- QIBA fMRI needs to address the Who-What-When-Where-Why in form of guidelines
- 100-200 related papers exist; need to compile, outline and weigh these studies in order to judge whether enough supportive evidence exists
- Dr Mukundan to forward ACR fMRI practice guidelines for RSNA staff to distribute

Need to establish best paradigm parameters

1. Begin with the Institute of Medicine criteria
 2. Go to community or to literature to determine evidence-based guidelines
 3. Recommendations of what needs to be done to translate fMRI into a valid clinical tool
- Two focus levels
 - Develop list of recommendations and guidelines
 - Education; what fMRI can and can't do
 - Focus on new users; what is most important for them to know; need to highlight issues and questions new users should be made aware of
 - Evidence-based recommendations needed to help guide which paradigm new users should begin with for pre-surgical mapping

Literature search

- Series of questions needed to develop guidelines based on evidence in existing literature; use existing studies as springboard and help determine next steps
- Experienced librarian (e.g. at Duke) suggested to pursue initial groundwork literature search for brain tumors; 20-30 literature searches may be needed to address specific questions
- Search terms and narrow narrative process needed, but group cautioned not to be biased or constrained by current literature findings
- fMRI mapping literature may be limited
- 1st step:
 - Divide into series of questions or guidelines we want to look for to help focus search
 - e.g. Studies of paradigms, how compared, etc
 - Create document on QIBA Wiki as search terms accumulate
 - Dr Elsinger to prepare first draft of search terms and potential relevant articles; group feedback requested
 - Low level: Evidence for optimal performance levels of paradigms
 - High level: Data available for language paradigms
- Literature available in both pre-surgical planning (general) and neuroscience (specific) need to be reviewed; caution not to skip/bypass specific neuroscience literature
- Proposed search terms to be based on:
 - Basic studies
 - Pre-surgical planning
 - Language paradigms

Next Steps:

- RSNA staff to distribute wiki log-in information
- Group members asked to send relevant article titles and search terms to Dr Elsinger with next few days
- Focus on f2f meeting at ASFNR in Las Vegas
- Dr Mukundan to forward ACR fMRI practice guidelines for RSNA staff to distribute
- Next call: March 10th, 2010 at 11am CST