

QIBA Perfusion, Diffusion and Flow – MRI Biomarker Committee (BC) Call

Wednesday, February 14, 2018 at 11 AM (CT)

Call Summary

Participants

<i>Daniel Barboriak, MD (Co-Chair)</i>	Harrison Kim, PhD, MBA	Mark Rosen, MD, PhD	RSNA Joe Koudelik
<i>Michael Boss, PhD (Co-Chair)</i>	Daniel Krainak, PhD	Samir Sharma, PhD	Susan Stanfa
Hubert Beaumont, PhD	Hendrik Laue, PhD	Jason Stafford, PhD	
Martin Buechert, PhD	Chen Lin, PhD	Ona Wu, PhD	
Amita Dave, PhD	Mikko Määttä, PhD	Junqian (Gordon) Xu, PhD	
Bradley Erickson, MD, PhD	Nancy Obuchowski, PhD	Robert Young, MD	
Daniel Gembris, PhD	Savannah Partridge, PhD		

Moderator: Dr. Boss

Progress Update on “Technical Performance of Quantitative Imaging with Emphasis on the Precision of DWI and DCE-MRI in Oncology” (White Paper on Reproducibility Study Needs)

- This effort, led by Dr. Amita Dave, is motivated by the dearth of published test-retest data and inconsistency in how the data are collected and presented, especially in some sub-modalities like DCE and DWI
- The goal is to standardize how the data are collected, analyzed and reported to be most useful for Claim development across various QIBA Profiles
- Dr. Dave reviewed recent changes and content added to specific sections
- Challenges for different body parts (brain, liver, prostate, head and neck) were recognized
- QC procedures and error metrics still needed for various organ systems
- Within subject coefficient of variation statistics presented by Dr. Obuchowski; all appear to be in sync with the performance specifications outlined in the Profile
- Dr. Obuchowski wrote Section 2.1: Precision metrology: Repeatability and Reproducibility, containing:
 - Study design of test-retest studies
 - Importance of and steps for measuring repeatability and reproducibility
 - References of material from metrology workshop
- Discussion on using specific types of phantoms (dynamic or static) for test-retest studies; suggestion to add paragraph containing rationale regarding phantom selection
- Separate paper on obtaining data during literature search process to be drafted and referenced in this white paper
- Discussion on logistical issues with DCE follow-up scans, due to IRB (and funding) required and the toxicity issues with gadolinium contrast agents
- While QIBA does not have policy on papers submitted for publication, authors to consult QIBA leadership to maintain a consistent message; Dr. Jackson to review, provide feedback, and sign-off
- Manuscript for publication in the Journal of Magnetic Resonance Imaging (JMRI) to be submitted during Q1 2018; it will be presented to the editors and publication policy/guidelines/requirement information will be requested
- Dr. Boss forwarded Dr. Kim’s paper, “[Portable perfusion phantom for quantitative DCE-MRI of the abdomen](#),” to Dr. Dave for reference in this paper
- Suggestions/input for this white paper can be submitted directly to Drs. Boss, Chung or Dave

Round-6 DSC DRO Project Update (Dr. Erickson)

- Funded by QIBA/NIBIB Contract No. HHSN268201500021C
- To access the DRO modeling Web interface and create digital simulations of DSC perfusion acquisitions, click on the link in the QIDW tools section on the QIBA website at: <http://www.rsna.org/QIDW/>
 - This tool is not compatible with Internet Explorer browser
 - User may select 1 of 3 DRO models
 - User to choose values for the many different acquisition parameters and assumptions about the imaged tissue
 - Modeling website will then create a downloadable 4D DICOM image that simulates those acquisition conditions specified by the user; the Mayo model takes 13-14 minutes to download, others models may require less time
- Feedback on this DRO tool can be forwarded to [Dr. Erickson](#)
- Discussion on methods to publicize this tool for maximum utility within QIBA and beyond; suggestions included:
 - Word-of-mouth
 - QIBA Newsletter
 - Demonstration at an upcoming meeting

Next PDF-MRI BC Call: Wednesday, February 28, 2018 at 11 AM CT

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