

## QIBA Diffusion-Weighted Imaging MR Biomarker Committee (BC) Call

Thursday, April 22, 2021 at 2 pm (CT)

### Call Summary

#### Participants

Michael Boss, PhD (Co-chair)

Dariya Malyarenko, PhD (Co-chair)

Rajpaul Attariwala, MD, PhD

Thomas Chenevert, PhD

Amita Shukla Dave, PhD

Carri Glide-Hurst, PhD

Wen Li, PhD

Daniel Margolis, MD

Nancy Obuchowski, PhD

Mark Shiroishi, MD

#### RSNA

Joe Koudelik

Susan Stanfa

#### Review of Previous Call Summary

- The notes from the March 25, 2021 DWI BC t-con were approved as presented

#### QIBA/ACR Joint Accreditation

- Dr. Boss had discussed this idea with ACR Quality/Safety contacts and provided an update to DWI BC members
- Due to limited resources, ACR representatives would prefer to revisit this proposal when the DWI Profile has achieved at least Claim Confirmation (stage 4) or Clinical Confirmation (stage 5) and when the Profile becomes widely used in clinical trials and/or clinical practice
- Quantitation remains of interest to the ACR and Dr. Boss' activities and efforts in this area have been supported

#### Achieving Stage 3: Technical Confirmation (TC) for DWI Profile

- Data from one or two systems across at least three sites are enough to meet TC requirements
  - Invicro and Cornell University have submitted feedback; hope to obtain data from the Brazil team study as well
- The DWI Profile will be restructured for conciseness, readability, usability, and only specifications necessary to achieve Claims will be included
  - Feedback from Dr. Margolis (Cornell University) indicated that the most salient content (e.g., checklists) should be moved to the front of the Profile and the Executive Summary should be condensed and incorporate more boilerplate language
  - All supporting scientific details to be moved to the appendices
- Profile content to be adjusted and relocated, concurrent with Profile restructuring efforts underway by the QIBA Process Committee
- As the Profile encompasses four different organ systems, the TC process will be complex; gradual progress on TC over an extended period of time is expected
- Collective data from multiple institutions focusing on each organ site would demonstrate that the entire DWI Profile is feasible; no one site is expected to pursue conformance for all four organ systems and each site may not be able to demonstrate conformance across all aspects, e.g., scanners, software, etc.
- Commonality across specifications may indicate which requirements are critical for achieving Claims and which are not essential; feedback will be used to help simplify the Profile and associated checklists
- Dr. Chenevert noted that the main focus will be on advancing quantitative imaging of each organ system (i.e., global standardization); QIBA milestones will be reached as a result of these broader, big picture efforts
- For efficiency, a feedback collection process utilizing a web-based survey with skip patterns was suggested
- It is important that QIBA sets a standard for phantom work that can translate into a clinical setting
- DWI phantom utilization may go beyond clinical care/clinical trials and benefit hardware vendors directly
  - Vendors could use phantoms to check their own system ADC values for potential bias
  - Dr. Malyarenko noted that the Profile is guidance to achieve better conformance, but not required for use if vendors have their own high-performing protocols

- A TF will be formed to organize TC feedback in a central location; Mr. O'Donnell has been developing some tools to aid this
  - Feedback will be reviewed, evaluated, and summarized
  - A proposal re: how to incorporate feedback into the DWI Profile, in terms of restructuring and changes to content, will be presented to DWI BC members during the next meeting on June 17
  - The TF will meet offline as a group of volunteers to include Drs. Boss, Chenevert, Dave, Glide-Hurst, Malyarenko and Margolis
  - Dr. Glide-Hurst to conduct a global review and provide general suggestions
- Work on the white paper will proceed in parallel with Profile efforts, and it will be used as an avenue to publicize the DWI Profile's advancement to TC
- Dr. Boss and Mr. O'Donnell to meet at 3 p.m. ET on Monday, April 26 to discuss Profile restructuring and an update will be brought back to the DWI BC
- To avoid a conflict with ISMRM in May, the DWI BC will reconvene on June 17; delaying the next meeting will also mitigate meeting burnout and allow more time for the TF to complete their proposal
- Dr. Boss to follow up with TF volunteers offline and organize a meeting to be held prior to June 17

**Next DWI-MR BC Call: Thursday, June 17, 2021 at 2 pm (CT)**

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