

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

Thursday, June 24, 2021 at 2 pm (CT)

Call Summary

Participants

Michael Boss, PhD (Co-chair)

Dariya Malyarenko, PhD (Co-chair)

Ishtiaq H. Bercha, MSc, MSEE

Thomas Chenevert, PhD

Carri Glide-Hurst, PhD

Gloria Guzmán, MD, MSc, MPH

Wen Li, PhD

Daniel Margolis, MD

Nikolai Mickevicius, PhD

Kevin Miller

Nancy Obuchowski, PhD

Savannah Partridge, PhD

Mark Shiroishi, MD

RSNA

Joe Koudelik

Review of Previous Call Summary

- The notes from the April 22, 2021 DWI BC t-con were approved as presented

General Updates

- For ease of use, the Process Committee is restructuring the Profile template, moving the checklist to the beginning, minimizing introductory text and moving all discussion and supporting details to the appendices
- The reformatted Template should result in shorter Profiles ~20 pages in length
- The CT Vol and DWI Profiles will pilot this new format but this effort will not delay advancement to the Technically Confirmed (Stage 3)
- White paper to come out after the DWI Profile restructure, focusing on the new streamlined format
- Dr. Guzmán received an RSNA R&E Foundation grant to support a multicenter head and neck study to better inform the Profile; this was deemed a clear Campaign 2021 deliverable
 - Study phantom runs to begin in 1-2 weeks; Drs. Boss and Margolis offered to review data once available
 - Dr. Guzmán welcomes DWI BC member questions re the study/imaging protocol; offline discussions possible re-running and optimizing DWI sequences, etc.
 - Dr. Guzmán to provide an optimized protocol for posting on the wiki or QIDW

Achieving Stage 3: Technical Confirmation (TC) for DWI Profile (Dr. Boss)

- Achieving TC will be possible in 2021 since enough data have been collected
- Data and feasibility feedback from three sites have been received from Invicro, Cornell and the Brazil team with all major scanner vendors being represented
- Profile feedback needed from Brazil team: Dr. Boss will contact the team to complete the form in real time
- Slightly different protocols were used, but deemed within the DWI Profile performance limits
- Australian colleagues have tested the perfusion phantom using the DWI Profile, demonstrating phantom stability
 - Site feedback needed; Dr. Boss to follow up with site PI
- Dr. Boss to create a Google sheet to collate site feedback and track BC resolution
- Phantom data are currently stored on M-Box, but eventually storing phantom data on the QIDW was suggested
- CaliberMRI is interested in providing 3rd party conformance services for the DWI Profile and a software validation process is underway with help from Drs. Malyarenko and Chenevert

Achieving Stage 4: Claim Confirmation (Dr. Boss)

- Achieving Claim Confirmed (Stage 4) deemed a future goal requiring more test/retest data
 - Dr. Obuchowski reiterated the need for a multiple site, multiple scanner study when pursuing Stage 4

VERDICT Collaboration Update (Dr. Malyarenko)

- DWI Profile to be implemented through a prospective prostate cancer single site, single scanner clinical trial study
- Test/retest data will be collected from 400 subjects

- Multiple acquisition parameter combinations will be tested and optimized for prostate, using a DWI phantom and repeatability for subsets of 10 subjects will be assessed
- Results will help inform the next PIRADS version and DWI Profile Claim language
- The current Profile focuses on longitudinal Claims, but PIRADS encourages cross sectional Claims
 - Imaging reproducibility is critical on a global scale
 - VERDICT study data may help develop a cross sectional Claim
- A second goal (and publication) is a retrospective analysis of recently published study data; 40 subject data collected using protocols similar to the DWI Profile

Next DWI-MR BC Call: Thursday, July 15, 2021, at 2 pm (CT)

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