

QIBA Diffusion Tensor Imaging (DTI-MR) Biomarker Committee (BC) Call

Monday, October 5, 2020 at 11 a.m. (CT)

Call Summary

Participants

Walter Schneider, PhD (Co-Chair)

Christopher Whitlow, MD, PhD (Co-Chair)

Tammie Benzinger, MD, PhD

Michael Boss, PhD

Aaron Field, MD, PhD

Els Fieremans, PhD

Mai-Lan Ho, MD

Dariya Malyarenko, PhD

Luca Marinelli, PhD

Nancy Obuchowski, PhD

James Reuss, PhD

RSNA

Joe Koudelik

Susan Stanfa

Welcome and Introductions (Dr. Whitlow)

BC members and staff were introduced and welcomed

Model for Literature Review (Dr. Schneider)

- Planned meeting structure includes a monthly meeting of the full DTI+ Biomarker Committee (BC), coordinated by RSNA staff
- Separate clinical and technical task force meetings of core members to be organized monthly by University of Pittsburgh staff and both attended by Drs. Schneider and Whitlow; monthly action items may include:
 - Read/summarize two papers in your area of expertise
 - Write half page on topic
 - Edit two pages of protocol
 - Identify example MRI protocol for given magnet
- A systematic literature search is the first step in the Profile development process, as Claim metrics must be supported by published test-retest data
- While there is no standard QIBA literature template, guidance is available on the [Tools and recommendations for structured literature review page](#) of the QIBA Wiki; conducting an effective and successful literature review would include
 - Reproducibility: search terms should clearly be defined, and the search period and time/data should be noted
 - “Test-retest,” and “reproducibility” suggested; terms used by the DWI BC included, “CoV”, “repeatability” and “coffee break”
 - During the previous PubMed literature search (when the DTI group was a TF under the PDF-MRI BC) terms used were MRI phantom (DTI or DSI or NODDI or “diffusion tensor imaging”) = 356 papers
 - DTI+ BC members were asked to enhance the search terms list
 - A defined and complete sorting system (i.e. a list of categories which covers all publications and is unequivocal)
 - The following resources are provided:
 - [Ten simple rules for writing a literature review](#)
 - [Systematic literature reviews](#)
 - [How to conduct a literature search in PubMed](#)
- Excel or Google Sheets can be used to organize and track articles accumulated during a literature review
- Dr. Whitlow to circulate a spreadsheet compiled by Dr. Provenzale, which can be used as a template

- The following tasks will occur in parallel:
 - Title evaluation, to reduce selection to 100 papers will be done by Co-chairs
 - Abstract evaluation of ~50 papers to be conducted by Co-chairs and Dr. Schneider's research assistant
 - Literature review template to be updated based on DTI+ BC member feedback
 - DTI+ BC members are were asked to review the target list and add article titles
 - Chair assignment/volunteer to read ~5 papers per member per month
- Actors who perform specifications of the Profile should be considered during the literature review phase; this will help clarify user requirements and expedite the Profile-writing process
 - Recommendation to limit the number of actors
 - Each specification in the main body of the Profile corresponds to a responsible Actor
 - Actors might include: Site, Radiologist, Physicist, Acquisition Device, Scanner Technician, Image Analyst, Reconstruction Software, and Image Analysis Tool
 - There will be parallels between DTI and DWI in terms of actors, logistics, etc.; recommendation to [reference the DWI Profile](#)

Next steps

- Dr. Schneider to conduct an updated literature search and establish an article repository; input to be requested from DTI+ BC members re: the search terms and approaches used
- Dr. Schneider to draft initial assignments for review of technical area papers and will adjust them in response to member feedback; assignments to be finalized in advance of the Oct. 26 Technical TF meeting
- Co-chairs to work on references and spreadsheet with paper titles, for circulation to DTI+ BC members

Next full DTI+ BC Call: Monday, November 2, 2020 at 11 a.m. (CT)

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