

# QIBA Dynamic Contrast-Enhanced (DCE) MRI Biomarker Committee (BC) Call

Monday, November 25, 2019 at 11 a.m. (CT)

*Call Summary*

## **In attendance**

Caroline Chung, MD (Co-Chair)  
Hyunki (Harrison) Kim, PhD, MBA  
Cristina Lavini, PhD

## **RSNA staff**

Joe Koudelik  
Susan Stanfa

**Moderator:** Dr. Chung

## **Dec. 4 QIBA Working Meeting during the 2019 RSNA Annual Meeting**

- Drs. Laue and Lavini will not be attending
- Dr. Chung will attend the meeting and modality breakout sessions

## **Profile Progress**

- During the Nov. 11 call, DCE-MRI BC members were asked to review Section 3 of the latest version of the [Profile](#)
- To avoid making edits to the text itself, feedback/comments were provided using "[Suggested Edit Mode](#);" comments were also added in the margin
- Section 3 and 4 updates made by DCE-MRI BC members were reviewed
- Section 3.6: Protocol and Reconstruction Design
  - B1-inhomogeneity in a phantom scan is more exaggerated than in a clinical brain scan due to the dielectric effect of water and hard interfaces of internal phantom components
  - Using a phantom for R1 testing is more practical than using true tissue; B1 correction with a human brain scan improves results only minimally
  - T1 errors with a phantom will be greater than with tissue; T1 error has a much larger impact on a scan than does B1 correction; range of acceptable T1 values to be investigated
    - Discussion on why this is the case; interfaces, liquids in phantom were cited as reasons
  - If a good B1-mapping technique is used, the scan can be corrected and the correct T1 will result
  - If one wants to assess the ability of a sequence to correctly assess T1 in a phantom, a good B1-mapping technique is essential
  - It was concluded during previous DCE-MRI BC calls that due to the dearth of literature and lack of access to B1-mapping sequences, Profile users cannot be required by the Claim to perform B1 correction
    - It was decided that an appropriate, measured solution would be to provide explanatory text and guidelines in the discussion for those who want to use B1 correction, but leave it out of the Claims
    - B1-mapping was removed from the Claims and 4.2 Assessment Procedure
- Section 3.8 Subject Handling
  - It was noted that the text re: timing of contrast injection was more applicable to DCE-MRI Profile v1.0 than v2.0, removal was suggested
  - Dr. Lavini suggested that speed of injection should be noted and maintained in all successive scans
  - Concern that including too much detail re: same injection site (whenever possible) and catheter size used for repeated studies might prevent some Profile users from being able to complete tasks; recommendation to use more general language

- 4.1: Assessment Procedure: R1/T1 Mapping accuracy
  - Dr. Lavini added text that the T1 or R1 reference values, “will depend on the body part imaged. In the brain, T1 values vary between 500 and 5000 (2000 if excluding ventricles), pre-contrast, in Prostate also less than 2000”
  - Dr. Lavini to add more details re: B1 mapping in phantom at 3T in 4.1.1: Testing T1 mapping sequence and algorithm validity and accuracy
  - A project investigating the repeatability of T1 phantoms completed by Dr. Thorsten Persigehl, MD was mentioned

### Next Steps

- Dr. Chung to address and delete all Profile comments prior to review during the RSNA Annual Meeting (breakout session on Dec 4<sup>th</sup>)
- Dr. Lavini’s changes to be incorporated and then a BC vote-to-release for public comment will be initiated

**Next call:** Wednesday, December 9<sup>th</sup>, 2019 at 11 a.m. CT (1<sup>st</sup> & 3<sup>rd</sup> weeks of each month)

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