

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

Monday, August 16, 2021, at 11 a.m. (CT)

### Call Summary

#### In attendance

Caroline Chung, MD (Co-Chair)

Hendrik Laue, PhD (Co-Chair)

Trevor Andrews, PhD

Cristina Lavini, PhD

Hyunki (Harrison) Kim, PhD, MBA

Nancy Obuchowski, PhD

Mark Shiroishi, MD

Steven Sourbron, PhD

#### RSNA staff

Joe Koudelik

Susan Stanfa

RSNA Staff attempt to identify and capture all committee members participating on Zoom calls. However, if attendees join only by phone, or do not use a recognizable name, identification is not possible. Participants are welcome to contact RSNA staff at [QIBA@RSNA.org](mailto:QIBA@RSNA.org) if their attendance is not reflected on the call summaries.

#### Update on DCE-MRI Profile

- The [Public Comment Resolutions Sheet](#) was referenced to address comments; details on resolutions reached through committee discussion and consensus are included
- DCE-MRI BC members are welcome to work on edits to the [Profile](#) currently in progress

#### The following comments submitted during the public comment period were addressed:

**Note:** below comments correspond to the [Stage 1: Public Comment version of the DCE-MRI Profile](#) posted on the [Profiles page](#) of the QIBA Wiki

- Trevor Andrews, PhD was present to discuss comments submitted on behalf of AAPM
- Due to the dearth of published test-retest studies, the DCE-MRI Profile is based on a limited amount of information
  - Barriers to conducting studies to obtain additional data include lack of funding
  - The DCE-MRI BC plans to conduct another literature search of recent studies to see if more data have been published since its last review; test/retest data assumed to exist, but just not published
- Regarding Tofts modeling: For a VIF extracted from MR images, time delays between vascular input function (VIF) and tissue DCE curves likely exist and impact perfusion estimation
  - The use of a pre-modelling correction by shifting the VIF is recommended in the DCE-MRI Profile; additional methods will be explored and supporting literature will be referenced
  - Additional details related to analysis can be found in the appendix
- There was a discussion regarding the use of the Profile for voxel-by-voxel perfusion modeling and the proposal to specify how perfusion-mapping techniques that incorporate spatial regularization to enforce perfusion image smoothness can be clinically evaluated and used
  - Those who would most benefit from clarification work outside of this subspecialty, have a background in general diagnostic imaging & MR experience, but would not be deeply familiar with the literature
  - Clarifying information dependent on the situation/application will be added to the appendix
- It will be specified that phantom scanning conducted by a technologist be overseen by a physicist; phantom data evaluation to be conducted by only the physicist
- It was recommended that the clinical use of DCE and long-term follow-up of patients be addressed
  - A site qualification for major changes in hardware and software will be recommended
- As VIP typically has a sharp peak on the first pass, whether it is necessary to capture the very peak for accurate DCE quantification will be considered; a requirement on temporal resolutions of DCE for imaging sites may be needed

**Next call:** Monday, September 13, 2021, at 11 a.m. (CT) [2<sup>nd</sup> & 4<sup>th</sup> Mondays of each month]