

QIBA CT Volumetry Biomarker Committee (BC)

06 May 2021 at 1 PM (CT)

Call Summary

In attendance

Rudresh Jarecha, MBBS, DNB, DMRE (Co-Chair)
Ehsan Samei, PhD (Co-Chair)
Kirsten Boedeker, PhD
Heang-Ping Chan, PhD
Alex Guimaraes, MD, PhD

Timothy Hall, PhD
Claudia Kirsch, MD
Annelise Malkus, PhD
James Mulshine, MD

Nancy Obuchowski, PhD
Kevin O'Donnell, MASc
Nicholas Petrick, PhD
Ying Tang, PhD

RSNA

Joe Koudelik
Julie Lisiecki

Moderator: Mr. O'Donnell

Call for 3rd co-chair:

- A 3rd co-chair is being recruited to help lead the BC; please contact giba@rsna.org with interest or questions
- Primary role of the co-chairs is to guide the advancement of the QIBA CT Volumetry Profile
- New perspectives are appreciated, particularly clinical expertise, if possible

Change Proposals: (Mr. O'Donnell)

- Looking at deep-learning-based algorithm reconstructions
- Next generation from iterative reconstruction will allow for faster response, lower noise, and better image resolution
- Change will impact inside assessment procedures, including filtered back projection, iterative reconstruction, and deep learning
- Dr. Samei does not think the addition of deep learning algorithms will make a dramatic change to the current Profile
- Mr. O'Donnell to draft the following language:
 - In-plane resolution assessment
 - Voxel noise assessment
 - Deep learning reconstruction
- Dr. Samei suggested using "linear" vs. "non-linear" terminology as more generic descriptions with added examples to leave the Profile open to future technology updates
- Mr. O'Donnell will distribute the updated Profile to BC members for review and comment prior to the next BC meeting, which will be planned for 4-6 weeks, via another doodle poll

Streamlining of the Profile

- Per Process Committee recommendations, Mr. O'Donnell is working to streamline and shorten the Profile
- All essential information will be moved to the front of the Profile, focusing on conformance, essential requirements, and the checklist, with a compressed introduction
- Additional discussion and supporting material will be moved to the Appendix for reference
- The intent is to make the Profile clearer and more user-friendly
- Dr. Samei suggested adding hyperlinks within the checklist to help users skip to sections in the larger Profile
- New current practice demonstrates that following the requirements produces a meaningful payoff
- Assessor "shall" bullet point lists have been created to simplify assessment procedures
 - Drs. Jarecha and Samei need to review these bulleted lists for accuracy
- Reducing the list of checklist requirements was also discussed via prioritization
 - If possible, it would be helpful to have a simpler method to demonstrate conformance to the Profile and completion of requirements
- Dr. Samei suggested an automated form for the checklist
- An algorithmic tool across a diverse set of imaging conditions and vendors was also suggested

Action items (ongoing):

- Mr. O'Donnell to provide simplified Profile to BC members for review and comment
- Mr. O'Donnell to add AAPM open-source software links to the Profile or for use on the wiki and to link a Google document that lists acceptable phantoms for the Profile for reference

- Obtain input from Dr. Obuchowski regarding the work of Dr. Samei's group to determine if a revised coefficient of variation is needed

Next Call: To be determined