QIBA CT Volumetry Biomarker Committee (BC)

17 June 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
Ritu Gill, MD, MPH
Lubomir Hadjiiski, PhD
Claudia Kirsch, MD
James Mulshine, MD
Nancy Obuchowski, PhD
Kevin O'Donnell, MASc
Juan Carlos Ramirez-Giraldo, PhD
Hiro Yoshida, PhD
Binsheng Zhao, DSc

RSNA

Joe Koudelik
Julie Lisiecki

Moderator: Mr. O'Donnell

Change Proposal #3: (Mr. O'Donnell)

- Discussed a new change proposal (CP-CTVol-003) allowing deep-learning-based non-linear reconstruction methods in the Profile
- This change aims to make the Profile more inclusive of other methods and systems, allowing for faster response, lower noise, and better image resolution
- The proposal was reviewed on the call, and a quorum of voting members was present
- Dr. Jarecha moved to approve the change, seconded by and Drs. Obuchowski
- There were no abstentions, and the motion to adopt this change proposal was passed
- Mr. O'Donnell will make the necessary edits to the Profile

APPROVED: Profile change proposal (CP-CTVol-003) was approved by the BC on June 17, 2021

Update on 3rd co-chair:

- Drs. Jarecha and Samei to meet with QIBA Leadership to discuss candidates for this role; a decision is anticipated by the August BC meeting

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
- Requirements that are just "good practice" will be archived in the appendix; a section for "extra credit" was suggested for checklist items that are recommended to enhance performance, though supporting data are not available
- Mr. O'Donnell suggested dropping requirements that are not helping to meet the claim
- Limiting the requirements to the 10 most important ones was suggested
- Technologists and other reviewers will be asked to take into consideration the rationale or justification provided for adhering to all checklist requirements
- A ranking system with stars was suggested for reviewers using an added column to the checklist:
    - ★ = should or must do
    - ★★ = should be done as a matter of practice
    - ★★★ = unique to the CT Volumetry Profile, e.g., MTF requirement

- Two review surveys were recommended:
    1. Significance of impact on volume estimates
    2. Universality of practice, i.e., is this close to routine practice today?

- Sites will be asked to score how close to universal practice requirements are to checklist requirements
- Data collected will be helpful in determining the numerical impact on volumetry
    - Dr. Mulshine said that this will depend on how data are collected and used
    - We do not want to lose "robustness" for very precise measurements

- Mr. O'Donnell to create these two surveys; suggested timeframe for completion of surveys was early August
- It would be helpful to have impartial reviewers outside of QIBA
- Dr. Mulshine suggested pulmonologists as a possible category of reviewers
    - Their data are collected over time and information collected could determine impact more objectively
    - Ten academic centers would be helpful, along with some free-standing imaging centers
    - CROs were another possibility
- Data from these surveys will help to move the Profile forward
- Dr. Samei suggested an automated form for the checklist, e.g., via SurveyMonkey or a Google Form
- Mr. O'Donnell will distribute the updated Profile and checklist via two surveys for review and comment prior to the next BC meeting, which will be planned for August, via another doodle poll

Action items (ongoing):

- Dr. Zhao to share article on radiomics / repeatability with BC
- Mr. O'Donnell to develop two surveys for Profile streamlining efforts
- 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 Calls: To be determined via doodle poll: (1) smaller working group – last week of July; (2) full BC in August