

QIBA CT Volumetry Biomarker Committee (BC)

20 April 2022 at 10 AM (CT)

Call Summary

In attendance

Ritu Gill, MD, MPH (Co-Chair)

Ehsan Samei, PhD (Co-Chair)

Lubomir Hadjiyski, PhD

Timothy J. Hall, PhD

Claudia Kirsch, MD

Jayant Narang, MD

Peter Ngum, MSc

Nancy Obuchowski, PhD

Jim O'Doherty, PhD, MSc

Kevin O'Donnell, MASc

Ying Tang, PhD

Hiro Yoshida, PhD

Binsheng Zhao, DSc

RSNA

Julie Lisiecki

Moderator: Dr. Gill

CT Volumetry BC Profile Ballot Update

- The BC vote-to-publish the revised Profile at its current stage of Technically Confirmed was successful.
- The ballot closed at EOB on Thursday, April 7, 2022, with a majority (10 votes) in favor to release the Profile (N=13), with 0 “no” votes or abstentions.
- There were some “no” responses regarding confirmation of tumor volume bias and linearity (extra questions) which may require further discussion.

Discussion Topics:

- Profile e-ballot feedback reviewed / ratification
- CT Volumetry Profile application for other organs besides lung
- Discussion re: liver and lymph applications

Decisions/Action items:

- Adjustments to be made to streamlined Profile per discussion on the call and ballot feedback
- Mr. O'Donnell to post the streamlined Profile version on the BC wiki page
- Profile change log suggested for future versions
- Suggested disclaimer wording: *“The Profile requirements are recommended for other solid tumor types (noting the need for disease-specific imaging protocol, contrast, phase, etc.)”*
- *The lung performance claim is based on earlier groundwork, however, the claim in “other” category has not been verified by the QIBA CT Volumetry Biomarker Committee. Work is planned to do that.*
 - Perhaps refer to solid organ primary tumor and metastases (liver, kidney) but not brain
 - 90% of metastases are in a few locations
 - Might split and include lymph, kidney, though not liver (which has the biggest visual contrast challenge, as well as injected contrast timing challenges); will also not include bone or brain
- Agreed to recommend the Profile procedures for non-lung
- If data can be collected for Claim Confirmation (Stage 4), it may be possible to adjust the performance numbers
- Range numbers suggested for repeatability that the radiologist could achieve with training, though this would be an assumption that would require additional validation (perhaps from the groundwork)
 - Need to make certain that claims reflect assumptions
- BC to consider issues related to test-retest data and how to move the Profile to the next stage
 - If the BC is unable to collect Stage 4 data, could also limit the claim to lung and have a recommendation to use the same approach for other organs but the claim is not confirmed
 - Lung is resolution sensitive but not noise, and other organs are likely the reverse

Ongoing action items (not certain if complete):

- Mr. O'Donnell to create a shared Google doc for brainstorming ideas for the next stage
- 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
- Mr. O'Donnell to consult Dr. Obuchowski if a revised coefficient of variation is needed

Next Call: to be determined via doodle poll (approximately one month from now)-?