

## QIBA CT Small Lung Nodule (SLN) Biomarker Ctte (BC) Call

25 February 2021 at 10 AM CT

Call Summary

### In attendance

David Gierada, MD (Co-Chair)

James Mulshine, MD (Co-Chair)

Rick Avila, MS

Artit Jirapatnakul, PhD

Annelise Malkus, PhD

Nancy Obuchowski, PhD

Mario Silva, MD

### RSNA

Joe Koudelik

Julie Lisiecki

**Moderator:** Dr. Mulshine

### COVID-19 Imaging Guidance Document Update (Mr. Avila)

- The guidance document on thoracic CT imaging for COVID-19, which was written in collaboration with the Lung Density BC, has been accepted by *Clinical Imaging*

### Wiki Updates for Technical Confirmation

- Mr. Avila to update Profile [technical confirmation resolution sheet](#) with latest details
- BC leaders / Mr. Avila to provide RSNA staff with documents to post on the wiki (e.g., the technical conformance / feasibility surveys, technical confirmation spreadsheet, etc.)
- These details were discussed on recent calls (summaries can be found on the [wiki](#))
- Dr. Gierada reminded the BC that “shalls” in the Profile needed to be translated to the checklist and vice versa to make certain that the documents align
- Any edits to the Profile will need BC discussion and consensus to move forward

### Phantom Update

- Dr. Lam at the University of British Columbia is working with the CTLX-S phantom; Mr. Avila will ship this phantom to Dr. Silva so he can perform the software analysis
- Dr. Gierada had previously scanned the phantom twice, but is uncertain if measurements were repeated twice in all instances
  - It would be helpful to have some repeatability measurements
- Dr. Malkus noted her strong support for repeatability measurements
- There is a low error margin in the small nodule measures of change, with additional performance challenges with nodules near the periphery
- Dr. Mulshine noted that the BC wants to make data available for use
  - Mr. Avila will plan an ad hoc call with Dr. Silva to discuss additional software analysis
- Mr. Avila demonstrated the latest water jacket phantom and explained that additional water bags could be provided to academic sites to simulate different-sized patients

### Feasibility check for software conformance (Mr. Avila)

- Software and scanners are a continually moving target for updates as they change and evolve
- A high-precision low-cost solution is in development
- 3-D printed ellipsoid nodules with and without “vasculature” attachments will be added; Dr. Mulshine suggested adding Mr. Avila’s proposed automatic detection method for all participating vendors
- Questions remain as to how this solution will be implemented into existing vendor software -
  - Does it need to be adjusted for each software program?
  - Can it be integrated into different software programs?
  - How can QIBA validate what the software is measuring?
- Mr. Avila proposed adding a software report for sites and including the lesion sizing toolkit
- Once complete, this updated method could serve as a conformance role model for QIBA BCs going forward

### Other topics

- Mr. Avila and Dr. Obuchowski are collaborating with the QSIC on finalizing the QIBA conformance certification marks
- Mr. Avila to organize an ad hoc call with Dr. Silva and SLN BC leaders to discuss the CTLX-S phantom analysis
- On the next BC call, Dr. Jirapatnakul will provide an update on his experiments

### Action items (ongoing)

- Mr. Avila to update Profile [technical confirmation resolution sheet](#) with latest details
- BC leaders / Mr. Avila to provide RSNA staff with documents to post on the wiki (e.g., the technical conformance / feasibility surveys, technical confirmation spreadsheet, etc.)
- Dr. Obuchowski and Mr. Avila to follow up offline re: software questions
- Mr. Avila to create checklists and divide assignments among relevant BC members
- Mr. Avila is drafting two peer-reviewed manuscripts for publication, which will support the SLN conformance process and provide details regarding the data used to make decisions
- Mr. Avila to ship one CTLX1S phantom to Dr. Silva for testing

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**Next call:** *TBD for March per Dr. Gierada's clinical schedule*

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