

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

12 December 2019 at 1 PM CT

Call Summary

In attendance

Samuel Armato, III, PhD (Co-Chair)

David Gierada, MD (Co-chair)

James Mulshine, MD (Co-Chair)

Rick Avila, MS

Nancy Obuchowski, PhD

RSNA

Joe Koudelik

Julie Lisiecki

Moderator: Dr. Mulshine

RSNA 2019 / QIBA Update

- Dr. Mulshine provided an overview of the CT Small Lung Nodule Breakout Session at RSNA 2019
- Discussions included ways to connect with the respective AAPM group to help advance the QIBA Small Lung Nodule Profile
- Dr. Mulshine and Mr. Avila made some local Chicago connections with health institutions that may be willing to test the phantom for feasibility testing, including Advocate and Aurora Health Systems; both show a growing interest in lung screening
- Advocate Healthcare currently screens approximately 1,000 people per year for lung cancer, whereas Aurora Health screens between 6 – 8,000 people per year
- Dr. Mulshine has also talked with Dr. Hatt, Co-Chair from the QIBA CT Lung Density BC, regarding aligning the Small Lung Nodule and Lung Density Profiles on an operational level for ease of use

Datasets

- Mr. Avila mentioned the need for specific SLN datasets to test analysis software components
- Dr. Yankelevitz has provided datasets with three different-sized nodules with three timepoints from multiple institutions
- Mr. Avila to follow up with Dr. Obuchowski regarding the number and type of datasets needed for statistical rigor
 - Current understanding was that the number of reps need to be high, but more information on the number of cases and institutions is needed

Technical Confirmation Work

- Dr. Silva has volunteered to help with technical confirmation testing
- Several additional users are needed
- The NIH Clinical Center was proposed, but it is uncertain if they would be a viable resource due to their lack of direct involvement with diagnostic imaging
- An Accumetra contact may also be interested in feasibility testing

CTLX2 (Water Jacket) Phantom Update

- Team members at Mt. Sinai have been testing the water phantom and new software is being developed to analyze acquired data
- Initial resolution and noise results are highly encouraging for newer and different scanners
- Another proposed study suggested that phantoms be scanned in a QIBA-conformant way vs. a QIBA non-conformant way to compare data

- Results from the QIBA-conformant method would demonstrate improved results vs. the loss of accuracy with a non-conformant method

Medical Imaging and Technology Alliance (MITA)

- MITA met with QIBA Leadership in October 2019 at RSNA HQ to discuss their concerns regarding metrics used in the SLN Profile
- QIBA Leadership is awaiting a response and proposed next steps from MITA representatives
- Because Dr. Sullivan previously stressed the importance of peer-reviewed publications in demonstrating the acceptance of the SLN Profile and conformance process by the scientific community, SLN BC members are working on new publications for 2020
- Mr. Avila emphasized that the feasibility testing is an opportunity for independent verification of performance characteristics
- It is also uncertain whether MITA represents software vendors also or only scanner manufacturers
- Any outreach must be carefully considered if new (conformance) processes may be perceived as a change in the current accreditation paradigm, which may require adaptation at the scientific and governmental levels
- QIBA strives to be evidence-based, open, transparent, and inclusive of MITA input/feedback
- An article related to the BC's work will be published soon by ELIC in the [Journal of Clinical Cancer Informatics \(JCO\)](#)
 - This article will demonstrate that screening is moving forward and growing exponentially

QIBA CT Small Lung Nodule Schedule:

- **01/16/2020** CT Small Lung Nodule BC call, 1 pm CT
 - **02/--/2020** CT Coordinating Committee, Quarter 1 call, TBD
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