

QIBA Lung Density Biomarker Committee (BC)

April 6, 2016 at 2 PM CT

Draft Call Summary

In attendance

Sean Fain, PhD (Co-Chair)

Matthew Fuld, PhD (Co-Chair)

David Lynch, MD (Co-Chair)

Andrew Buckler, MS

Heather Chen-Mayer, PhD

Charles Hatt, PhD

Philip Judy, PhD

Nancy Obuchowski, PhD

Eric Perlman, MD

RSNA

Julie Lisiecki

Phantom Scanning, Round II: Updates

- Dr. Fuld and Ms. Dharaiya discussed ways to include a Philips scanner in the data
- Ms. Dharaiya recommended her colleague, Charlie White, to assist with the Philips scanning
- Dr. Fuld will follow up with an additional Philips contact at the University of Maryland
- Dr. Fuld still has four phantoms to use for scanning; he and Dr. Chen-Mayer may also try to borrow a CTDI EIBALL phantom to obtain additional data
- They will not utilize the Alderson 2: results from that phantom were deemed less useful
- Dr. Fain plans to invite Dr. Hoppel to UW to review the Toshiba data, as it cannot be released
- Dr. Fuld has the following phantoms to test the Philips scanner using Dr. Fain's AEC protocol:
 - COPDGene1
 - COPDGene2
 - a 3-D printed NIST foams from Dr. Chen-Mayer
 - SRM foams phantom
 - CTDI phantom [tentative] (A computed tomography dose index (CTDI) QA phantom)
- Dr. Fuld mentioned that U-Iowa is moving forward with software upgrades and hopes to have new updates out to the group within the next two weeks
- Dr. Hatt is working with COPDGene related to a new batch of data including 200 scans from 200 patients, utilizing the new lung screening protocol
- The Lung Density BC is seeking permission to use this data to do a comparison to similar data that was acquired five years ago, for a thorough data analysis
 - The team would like to establish repeatability of density measurements and to include comparison data for volume adjustment
 - Repeatability and both low and high doses would be tested, with volume correction
 - Results from these tests would be integrated into the Profile
 - It is important to make sure efforts are not being duplicated

Proposed Projects for Round-6:

- Proposals will focus primarily on harmonization of vendor scanning protocols and utilizing COPDGene phantoms to accomplish this goal
- Dr. Judy previously proposed a project to test conformance and feasibility once the harmonization protocol is ready
- A test of harmonization procedures for the same scanners being used for lung cancer screening could be tested using the COPDGene2 Phantom to evaluate the protocol and demonstrate its practicality
- Dr. Chen-Mayer to consider a proposal for adjustment of density measurements based on several sources:
 - literature search on tissue simulance
 - dual-energy scans
 - mapping
 - translation of phantom results to human use
 - Mr. Levy (Phantom Labs) has a new plastic material available that could be helpful with the effort
 - The materials is very stable and has a low density value
 - Challenge: A PI is needed to lead the effort; Dr. Lynch to consider

For next call: Group to discuss volume adjustment analysis for the Profile and next steps needed to complete the Profile

Next call: Wednesday, April 20, 2016 at 2 pm CT