

QIBA Lung Density Biomarker Committee (BC)

August 26, 2015 at 2 PM CT

Call Summary

In attendance

Sean Fain, PhD (Co-Chair)

Matthew Fuld, PhD (Co-Chair)

David Lynch, MD (Co-Chair)

Heather Chen-Mayer, PhD

Dominic Crotty, PhD

Eric A Hoffman, PhD

Bernice Hoppel, PhD

Philip Judy, PhD

Greg Kinney, MPH, PhD

Joshua Levy

John D. Newell Jr, MD

Roomi Nusrat, MD

Jered Sieren, BSRT(R) MR CT

RSNA

Julie Lisiecki

Agenda:

1. Continue to reconcile use of the vendor phantom scans to inform the specifics of the Profile
2. Progress Report on Automated Exposure Control and IR to support lower dose protocols for quantitative lung CT

Phantom Scanning, Round II:

- *COPDGene2*:
 - Additional COPDGene2 phantom scanning to be completed at NIH
 - Parameters used with the COPDGene2 phantom:
 - helical scanning
 - 3 milligray (mGy)
 - Iterative reconstruction (IR) may also be needed
 - Possible to incorporate AEC parameters to test harmonization.
- *Alderson Radiation Therapy Phantom 2 (ART)*:
 - Alderson 2, an anthropomorphic phantom, to be scanned by the team at various local sites (*Iowa, Illinois, and Wisconsin*), due to shipping restrictions for the 50-pound phantom
 - Researchers will drive the phantom to sites to prevent phantom damage
 - NIST-calibrated foams will be used with special modifications for ART 2
 - 4, 12, and 20 pound foams to be used
- The task force team hopes to have this round of scanning completed soon after Labor Day
- Purpose of the scanning is two-fold:
 - to define recommended scanning parameters at a lower dose
 - to harmonize Automatic Exposure Control (AEC) and establish baseline performance of different IR algorithms across different platforms and models
- The end goal of the phantom scanning is to produce harmonized low dose scanning protocols for quantitative CT of the lungs
- Based on results to-date, the task force recommended that AEC and IR parameters be incorporated into the Profile

Action items:

- A translation matrix is needed for the various platforms; Dr. Fuld is working on creating one
- Table of AEC and IR settings to be scanned by vendors to be provided by Dr. Fain.
- Co-chairs to invite Mr. Buckler to a future call to discuss development of conformance procedures, across QIBA groups (Suggested that this be after the 2nd round of vendor scans – possibly Sept. 23).
- Vendors to take notes on harmonization while scanning to inform performance metrics in the Profile
- Additional discussion regarding adaptation to patient sizes for harmonization across vendor platforms

Next call: Wednesday, September 23, 2015 at 2 pm CT