

## QIBA COPD/Asthma/ CT Lung Density Technical Committee

May 7, 2014 at 2 PM CT

Call Summary

### In attendance

**Philip F. Judy, PhD (Chair)**

Andrew Buckler, PhD

Heather Chen-Mayer, PhD

Sean Fain, PhD

Matthew Fuld, PhD

Bernice Hoppel, PhD

Joshua Levy

David Lynch, MB

Berend Stoel, PhD

Daniel Sullivan, MD

### RSNA

Joe Koudelik

Julie Lisiecki

### Agenda 5/7/2014:

CT Lung Density Technical Committee

1. Standardize Evaluation AEC for Quantitation  
Status of revision of proposal
2. Status of 2015 Lung QCT Conference  
Meeting - time and location SPIE Medical Imaging  
February 21-26, 2015  
Renaissance Orlando at SeaWorld
3. Lung density profile claims  
Benefits and consequences of volume correction
4. TC Report at QIBA Annual Meeting
5. Citations to Profile
  - a) Include alpha 1 investigations
  - b) Exclude lung reduction investigations
6. Plan to finalize Acquisition and Reconstruction Sections of Profile.

**Next call:** Wednesday, May 28, 2014 at 2 pm CT

### Discussion topics included:

- Dr. Fuld gave an update regarding manufacturers willing to collaborate on acquisition and reconstruction parameters
  - Siemens, Philips, and Toshiba intend to proceed with the project
  - Dr. Fain to approach his GE contact in hopes of securing another manufacturer
- Dr. Fain is creating precision tables for addition to the Profile
  - Focus for metrics will be on the Relative Area (RA) at -950 HU and PERC15.
  - The RA -960 Hounsfield unit (HU) measurement will not be used because the RA -950 HU threshold is also highly correlated to microstructural emphysema measured with the gold standard of tissue biopsy. Additionally, the RA -950 threshold is commonly used in the literature, while RA -960 HU is not.
  - Dr. Fain is also addressing suggested edits for his Round-4 (2014-2015) QIBA project proposal
- Dr. Stoel presented his publication regarding "Effect of Volume Correction – Phantom Study" to aid the examination of bias and precision volume corrections
  - The purpose of his study was to assess the impact of volume correction on the reproducibility of lung density.
  - Toshiba Aquilion 4 scanners were used, following the SPREAD protocol
  - He concluded that most of the original variation could be resolved by volume correction with this phantom
  - More experiments are needed where large luminal differences are explored, due to the challenges they pose for volume correction
- Dr. Chen-Mayer consulted with Dr. Stoel re: efforts to reconcile the phantom study with patient data
  - Other areas of focus include:
    - Recreating dependence as described in Park's paper
    - Looking at the phantom / mechanical effect vs. real biological effect
    - It is unclear how the phantom data will be used in the Profile claim at this time

- Additional vendor systems needed for cross-comparison
  
- **Status of 2015 Lung QCT Conference**
  - SPIE in Orlando, FL from February 21-26, 2015 is being considered as a QIBA Lung qCT conference partner in hopes of encouraging additional collaboration with the lung density projects
    - A staff contact within SPIE or a QIBA member who is knowledgeable and involved with both SPIE and QIBA lung density projects, would be very helpful for coordination purposes
  
- **QIBA Annual Meeting Update**
  - Dr. Judy previewed his Tech Ctte summary of activities to be presented at the QIBA Annual Meeting
    - Modeling, progress on the claim, efforts to standardize AEC and plans for effective collaboration with CT vendors to be addressed
  
- **Change in name of QIBA technical committee**
  - Dr. Judy proposed that the group be called the *CT Lung Density Technical Committee*, instead of the QIBA COPD/Asthma Technical Committee, to more accurately reflect current efforts.

**Action items:**

- Dr. Judy to draft a QIBA meeting support proposal form for an ad-hoc meeting for qCT of the Lung at a 2015 conference

**QIBA CT Lung Density Tech Ctte next call: 5/28/2014**