QIBA COPD/Asthma/ CT Lung Density Technical Committee
May 7, 2014 at 2 PM CT
Call Summary

In attendance

Philip F. Judy, PhD (Chair) Bernice Hoppel, PhD
Andrew Buckler, PhD Joshua Levy
Heather Chen-Mayer, PhD David Lynch, MB
Sean Fain, PhD Berend Stoel, PhD
Matthew Fuld, 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
   o Siemens, Philips, and Toshiba intend to proceed with the project
   o Dr. Fain to approach his GE contact in hopes of securing another manufacturer

Dr. Fain is creating precision tables for addition to the Profile
   o Focus for metrics will be on the Relative Area (RA) at -950 HU and PERC15.
   o 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.
   o 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
   o The purpose of his study was to assess the impact of volume correction on the reproducibility of lung density.
   o Toshiba Aquilion 4 scanners were used, following the SPREAD protocol
   o He concluded that most of the original variation could be resolved by volume correction with this phantom
   o 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
   o 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
  o 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
  o 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
  o 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