

QIBA Lung Density Biomarker Committee (BC) Call

February 15, 2017 at 2 PM CT

Draft Call Summary

In attendance

Sean Fain, PhD (Co-Chair)

Heather Chen-Mayer, PhD

Charles Hatt, PhD

Bernice Hoppel, PhD

Stephen Humphries, PhD

Philip Judy, PhD

Miranda Kirby, PhD

Nancy Obuchowski, PhD

Jered Sieren, BSRT(R) MR CT

RSNA

Joe Koudelik

Susan Weinmann

Discussion of Image Analysis Workflow and Software Challenge (Mr. Sieren)

- Mr. Sieren shared the QIBA Density Profile analysis plan
 - 4-5 month timeline
 - Approval status on data (see data breakdown section)
 - Drs. Lynch and Hatt to continue collection of reference dataset for airway analysis
- Analysis Design Phase has been completed; included establishment of segmentation guidelines and measurement outcomes
- Currently in Data Procurement Phase
 - 50 full dose and 50 low dose datasets were requested from COPDGene; approval is pending
 - Application to be submitted for data upload to the QIDW
- Next phase is Analysis (March-May 2017):
 - Vendors to submit data request
 - Segmentation masks to be obtained from each participating vendor
 - Average values regarding heterogeneity of Perc 15 to be calculated and compared
 - Assumption is that there will be 3-4 participating vendors
 - csv output to be submitted directly to Dr. Kirby for analysis
- Statistical Analysis (May – June 2017):
 - Image histogram to be generated and submitted by vendors along with csv files
 - Dr. Kirby to generate Bland-Altman plots with assistance from Dr. Obuchowski
- Conclusions (May – June 2017):
 - Measurement tolerances to be added to the Profile
 - Analysis sections to be finalized
- The group believes that it would be useful to the field to have an established reference dataset
- Institutions with their own software to be contacted
- International institutions (specifically in Korea & Japan) to be considered
- Invited participants to be presented with a firm deadline
- Once anonymized results from the challenge are obtained, Profile can be completed

Profile Work (Drs. Hatt and Kirby, and Mr. Sieren)

- Significant progress was made by Mr. Sieren and Dr. Hatt on Measurement Section
- Other Profile writing assignments include:
 - Calibration/Periodic Quality Assurance – Drs. Chen-Mayer and Humphries
 - Interpretation – Drs. Lynch and Naidich
 - Acquisition – Drs. Hoppel and Fuld (parameter setting needed from all vendors)
 - Reconstruction – Drs. Fain and Judy

- Spiromics repeatability data to be included in Profile
- November 30, 2016 QIBA Working Meeting Breakout Session notes along with latest Profile draft to be distributed by RSNA staff
- Profile draft to be ready for internal review by the full Lung Density BC by April 1
- A review of the near-final version of the Profile prior to Public Comment release will be completed during the Lung Density Breakout Session at the [QIBA Annual Meeting, May 17 – 18](#); using WebEx for those not in attendance

Discussion Regarding the Round-6 Groundwork Project (Dr. Humphries)

- Title of project: “CT lung density biomarker: translating phantom harmonization to clinical practice”
- Dr. Humphries to conduct one more round of scanning, then will distribute phantom to other sites for field testing of harmonization

Next call: [Wednesday, March 1, 2017](#) at 2 pm CT