

QIBA Lung Density Biomarker Committee (BC) Call

January 18, 2017 at 2 PM CT

Draft Call Summary

In attendance

David Lynch, MD (Co-Chair)

Charles Hatt, PhD

Miranda Kirby, PhD

RSNA

Joe Koudelik

Andrew Buckler, MS

Stephen Humphries, PhD

Nancy Obuchowski, PhD

Julie Lisiecki

Heather Chen-Mayer, PhD

Philip Judy, PhD

Gonzalo Vegas Sanchez-Ferrero, PhD, MSc

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

- Discussion of Image Analysis Workflow including the following topics:
 - Obtaining segmentation masks from every vendor that agrees to participate in the software challenge
 - Average values regarding heterogeneity of Perc 15 will be calculated and compared for every vendor
 - Low-dose imaging details need to be added
 - Commitment from potential participants is needed
 - Dr. Kirby is looking into making data available for download for the QIDW
 - Cases still need to be selected
 - Dr. Lynch to choose 20 cases from each hold on [dbGaP](#) once a studies request is submitted
 - Data will need to be re-anonymized without COPDGene identifiers
 - Plan to select cases with both regular (high) dose and low dose using filtered back projection scans with iterative reconstruction (IR)
 - It is unknown whether IR may interfere with the segmentation
 - Comparison between regular and low dose scans is needed in order to properly power the study
 - Dr. Obuchowski offered to perform a statistical power analysis based on a variability calculation
 - Variability needs to be determined to defend the Profile performance numbers; Dr. Hatt intends to prepare a variance analysis for the next call on 2/1

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

- Title of project: "CT lung density biomarker: translating phantom harmonization to clinical practice"
- Dr. Humphries is beginning the dissemination of the QIBA-SRM phantoms to COPDGene sites
- Scans will be acquired per the QIBA CT Lung Density Profile; a clean protocol, and analysis method are still needed
- SIM foams will be used to provide ground truth
- University of Iowa software will be utilized for analysis
- Dr. Chen-Mayer to prepare Round 2 analysis for the next call, (2/1), to aid with planning for the scanning protocols
- Sites with diverse equipment will be selected
- Dr. Obuchowski to be consulted regarding the study design

Action Items

- Dr. Hoppel to follow up with Dr. Chen-Mayer regarding data questions, and with her Toshiba contact in Toronto
- Dr. Lynch to follow up with Ms. Ekta Dharaiya, the group's Philips liaison
- Dr. Chen-Mayer to discuss preliminary results on 2/1 call
- There will also be an AEC update on 2/1
- Drs. Hatt, Kirby, and Mr. Sieren will provide additional updates on the Image Analysis section of the Profile as well as additional details regarding the proposed challenge

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