

QIBA Lung Density Biomarker Committee (BC) Call

March 15, 2017 at 2 PM CT

Draft Call Summary

In attendance

Sean Fain, PhD (Co-Chair)

Heather Chen-Mayer, PhD

Stephen Humphries, PhD

RSNA

Joe Koudelik

Matthew Fuld, PhD (Co-Chair)

Charles Hatt, PhD

Nancy Obuchowski, PhD

Julie Lisiecki

David Lynch, MD (Co-Chair)

Update on Spiromics Data

- Dr. Fain to follow up with Dr. Iyer at the University of Iowa regarding his research
- Spiromics repeatability data will be included in the Profile once released by Dr. Eric Hoffman after publication; Dr. Fuld has sent a request for use of this data

Software challenge

- Dr. Hatt met with Mr. Sieren and Dr. Kirby to discuss goals for the challenge
- Dr. Hatt to suggest potential challenge candidates, lung density software developers
- Dr. Hatt to follow up with identified vendors and determine interest to participate
- Data to be requested from COPDGene as an ancillary study
 - An agreement may be required that the data will only be used for a specific purpose
 - Yet undetermined is how data can be accessed from COPDGene
 - Downloaders of data would need to be tracked
 - Datasets might need to be re-anonymized with new IDs for the challenge
 - If placed on Dropbox, Box, or the QIDW, datasets would only be made available for a restricted period of time with password access only
 - Data location for challenge remains uncertain at this time
- Dr. Kirby investigated use of the QIDW and the group is interested in her opinion on the site and how conducive it might be to hosting a challenge

Also discussed but not finalized:

- Checklist for challenge considerations provided by RSNA Staff to consider prior to organizing a challenge
- Rules and regulations for the challenge
- Registration, data collection, and anonymization procedures
 - Participant agreement, instructions, forms for participation, etc., need to be created
- How analysis will be performed and whether feedback will be provided
- Whether the QIDW, a secured Dropbox, or COPDGene would be used to host the data
 - The QIDW Oversight Committee is presently reviewing the data upload proposal
 - Waiting for follow-up from Dr. Kirby
- The purpose of the challenge is not yet defined
 - It is needed to inform the Profile, but is not a feasibility test
 - Bias cannot be measured without ground truth; only repeatability or reproducibility can be measured
 - "Consensus" may be a more accurate description for the goal of the challenge
- Would the challenge be limited to a small carefully chosen subset of vendors or advertised to generate interest from a larger group?
- Will the challenge be limited to software that has been FDA-approved, or open to research software?
- Once organized, a BETA test of the challenge is highly recommended prior to opening it to participants
 - Dr. Raul Estepar (Harvard/ BWH) suggested to lead the BETA test

Round-6 Project (Dr. Humphries)

- Dr. Humphries has sent a phantom to U-Iowa and is waiting for scan results
- He is also collaborating with Dr. Chen-Mayer regarding translational research and how to analyze a compressible phantom, including issues with scanner variation, histogram results, simulated translation, etc.
- Repeat cans are being studied under different conditions to model volume adjustment

Profile Update

- Dr. Fain has set a deadline of April 1st for Profile completion
- It would be helpful to have the Profile completed prior to the QIBA Annual Meeting so that the face-to-face portion of the meeting could be used for editing and preparing the Profile for public comment
- Co-chairs are asked to review the Profile
- Dr. Lynch is working on completing his assigned section in time for the 3/29 call
- Decision needed regarding what to include from the Spiromics meta-analysis to form the claims
- The five cited studies were deemed sufficient though the appendix needs to be updated

Next call:

- Profile updates will be reviewed
- Updates on the QIDW and the proposed software challenge will be discussed
- Follow up regarding the piston phantom to look at the variability of Perc 15 will be discussed

Next call: [Wednesday, March 29, 2017 at 2 pm CT](#)