

QIBA Lung Density Biomarker Committee (BC)

Wednesday, June 23, 2021, 2 PM CT

Call Summary

In attendance

Charles Hatt, PhD (Co-Chair)

Miranda Kirby, PhD (Co-Chair)

Rachel Eddy, PhD

Sean Fain, PhD

Stephen Humphries, PhD

Philip Judy, PhD

Annelise Malkus, PhD

Hatem Mehrez, PhD

Amin Motahari, PhD

John Newell, Jr., MD

Nancy Obuchowski, PhD

Sam Peterson, MS

Josh Schirm, BSE

Gonzalo Vegas-Sanchez-Ferrero, PhD, MSc

RSNA

Joe Koudelik

Susan Stanfa

Moderators: Drs. Hatt and Kirby

Biomarker Proposals

- A [new biomarker proposal](#) will need to be submitted to the CT Coordinating Committee and if approved, QIBA Steering Committee review would be required; more information on this process can be found on the [QIBA wiki](#)
- [Notes](#) posted to the [Lung Density BC QIBA wiki page](#) can be referenced for detailed descriptions of biomarkers

Gas-trapping Task Force (Dr. Hatt)

- This proposal is nearly complete; Dr. Hatt requested that TF members review the draft and make edits as soon as possible
- Drs. Fain and Vegas-Sanchez-Ferrero volunteered to review the proposal and provide feedback
- The TF will meet next on ~July 7

Airways Task Force (Dr. Kirby)

- This TF met in early June and discussed which airway measurement should be the focus: more global = Pi10; regional = airway-driven
- Drs. Hoffman and Motahari granted permission to cite their study (being readied for publication); they granted permission to include it in the proposal
- The BC proposal was distributed by staff on June 23 and Dr. Kirby requested that Lung Density BC members review it and provide feedback

Lung Density Profile - Feasibility Testing

- As a first step toward feasibility testing (technical confirmation), checklist to be incorporated alongside COPDGene study phantom scanning efforts
- The goal was to begin testing with sites already familiar with complicated quantitative chest imaging
- Dr. Fain had met with Mr. Avila to discuss next steps and it was confirmed that no modifications to the Profile checklist were needed
- The [Profile Stages page](#) on the QIBA Wiki was referenced to identify some distinctions between stages 3 and 4:
 - Stage 3: several sites have performed the profile and found it to be practical and expect it to achieve the claimed performance; the Profile claim and requirements may change based on Claim testing results
 - Additional details can be found on the [Technical Confirmation Process](#) page on the QIBA Wiki
 - Stage 4: Profile has been found to achieve the claimed performance
- At least three sites are needed to obtain reasonable confirmation of results
- Sites are not being asked to adopt the Profile in their routine work, but to determine whether their pilot experience indicates the Profile's practicality in routine work
- One effective approach to collecting feedback is to add a column to conformance checklists for sites to indicate for each requirement if the site could perform it, if they found it practical to do, and if they have any comments
- Only a small number of BC members finalized the Lung Density Profile, so additional review by BC members was recommended, prior to sending out the checklist to sites
- After discussing concerns related to homogeneity (using only experienced COPDGene study sites), it was explained that this would be a simple preliminary approach to feasibility testing with the intention to expand to additional sites once initial site feedback is incorporated
- Dr. Vegas-Sanchez-Ferrero to contact Dr. Washko, main contact for the COPDGene study, re: use of the Profile

Action items (ongoing):

- Gas-trapping TF members were asked to make final edits to the biomarker proposal; the TF to meet next ~July 7
- Dr. Kirby requested Lung Density BC member feedback on the Airways biomarker proposal
- Checklist to be incorporated alongside COPDGene study phantom scanning efforts; Dr. Humphries to conduct feasibility testing at National Jewish Health and will contact site coordinators to request their participation

Next meetings: 7/28, 8/25

Parametric Response Map Gas-trapping	Airway Measurements Analysis
Ehsan Abadi, PhD	Samuel Ash, MD, MPH
Rachel Eddy, PhD	Raul San Jose Estepar, PhD
Sean Fain, PhD	Philip F. Judy, PhD
Chuck Hatt, PhD	Miranda Kirby, PhD
Joe Mammarrappallil MD, PhD	John D. Newell Jr., MD
Lars Nordenmark, PhD	Nancy Obuchowski, PhD
Yoshiharu Ohno, MD, PhD	Samuel Peterson, MS
Gonzalo Vegas-Sanchez-Ferrero, PhD, MSc	Claudio Silva, MD, MSc