

## QIBA Lung Density Biomarker Committee (BC)

August 12, 2015 at 2 PM CT

Draft Call Summary

### In attendance

Sean Fain, PhD (Co-Chair)

Matthew Fuld, PhD (Co-Chair)

Andrew Buckler, MS

Charles Hatt, PhD

Philip Judy, PhD

Greg Kinney, MPH, PhD

Nancy Obuchowski, PhD

### RSNA

Julie Lisiecki

### Agenda:

- Presentation by Dr. Judy on topics of CT dose reduction on density measures compared to full dose scans
- Continue to reconcile how to use the vendor phantom scans to inform the specifics of the Profile

### General Discussion:

- Dr. Judy gave an update regarding his efforts to reconcile low-dose expiratory scans to high- dose inspiratory scans using volume correction
  - Data were selected in which FRC and TLC lung volumes were approximately the same (CT volume ratio was  $\geq 0.9$ ); FRC volumes were acquired at  $\sim 1/4$  the dose of the TLC scans.
  - Results demonstrated that systematic shifts were observed in the fraction of lung less than -950 HU towards higher values for the low dose scans compared to the full dose scans.
  - The degree of systematic error was greater as a function of the severity of disease.
  - A single correction factor; e.g. a shift in value to adjust the CT histogram is therefore not likely to work.
  - Data were limited to patients with the lowest BMI ranges
  - Noise was a confounding factor
- Discussion regarding how harmonization of the vendor scans should guide the target performance metrics in the Profile
  - There are two practical aspects for consideration:
    - Is it expected that users for the Profile will harmonize scanner performance using the COPD Gene phantom? Optimization of distribution
    - Will we incorporate AEC into the current draft of the Profile?
- Adaptation to patient sizes to allow harmonization across vendor platforms will likely be necessary
  - Due to the complexities, this topic will be revisited on the next call, August 26<sup>th</sup>
    - It was not yet determined whether AEC will be a part of the Profile at this time due to numerous complexities of harmonization across platforms

### Action Items:

- Dr. Fuld to draft an appendix for the Profile to outline the details of vendor harmonization
  - Feedback welcome to Dr. Fuld: [Matthew.Fuld@siemens.com](mailto:Matthew.Fuld@siemens.com)
- Vendors to take notes on how harmonization is working while they are scanning
  - Results from vendor scanning will be used to inform the Profile
- Update on AEC project will be on the agenda for next call.

**Next call:** Wednesday, August 26, 2015 at 2 pm CT