

QIBA COPD/Asthma Committee Update

Tuesday, March 16, 2010

11:00amCT

Call Summary

In attendance

Philip Judy, PhD (co-chair)
David Lynch, MD (co-chair)
Andrew Buckler, MS
Harvey O. Coxson, PhD
James Crapo, MD
David S. Gierada, MD
Zachary H. Levine, PhD
Michael McNitt-Gray, PhD

John D. Newell Jr, MD
Jered Sieren
Daniel C. Sullivan, MD

RSNA Staff

Fiona Miller
Susan Anderson, MLS
Joe Koudelik

COPD Gene phantom modification (Dr Judy)

- Phantom modification shipped to Iowa for scanning on Siemens Sensation 64; scanning to be done in week of March 15
 - Iowa does not currently own an ACR accreditation phantom
 - Catphan and COPD Gene phantoms to be scanned simultaneously
- Phantom Design group call scheduled for Thursday, March 18 to discuss analysis of NIST foam; because of the number of scans, Dr Levine is working on automated tools to examine the scans
- Shape of histogram is confounded by technical parameters and computer measurement programs

QIBA Profile (Dr Judy)

- Discussion on draft Claim statement drafted by Dr Judy
- Foam studies should lead to reference phantom design to validate profile
- Bulk lung density (BLD - mass of soft tissue material ÷ lung volume) measurement considered better than lung function measurement
 - Qualification of 1% change in bulk lung density may be too ambitious; used 3% instead for long term instrumental precision
 - Dr Crapo may have data from COPD Gene and other studies to tweak numbers
- Consider including parameter such as “% emphysema = % of lung < or > -950 HU” proposed as metric (normal is -750 or -700; non-smoking controls up to 5%, emphysema up to 50%)
- Consider using broader terms such as “alveolar wall thickening process”
- Consider using “smoking-related lung diseases” instead of emphysema
- Consider expanding Profile by adding 2-3 parameters such as variations in bulk lung density; variation of air density in lung; clinical point of view; amount of lung with holes
- Claim may be a relative compromise; long-term variability in measurement is limited by other factors such as inspiration and other factors not addressed by this group
- Dr Judy stated his bias towards early process, e.g. analysis of “Gold Zero” cases for emphysema progression study
- Consider tie-in to morphometry and also to clinical implications; consider more than one Profile
- To incorporate elements of UPICT protocol template, add analysis and interpretation language
- Feedback on COPD Profile sections encouraged; convey to Mr Buckler via mark-up on Wiki or via email; analysis and interpretation to be added to current Claim language
- Source material needed for each specific Profile section:
 - Drs McNitt-Gray and Lynch—acquisition section
 - Drs Coxson and Hoffman – analysis section
 - Drs Judy and Hoffman – protocol and analysis sections
 - Drs Crapo and Washko – clinical context section

Next steps:

- Feedback on COPD Profile sections encouraged; convey to Mr Buckler via mark-up on Wiki or via email
- Dr Crapo to send table of BLD values to the group for reference (normal to disease progression examples)
- Volunteers to complete specific Profile sections:
 - Drs McNitt-Gray and Lynch—acquisition section
 - Drs Coxson and Hoffman – analysis section
 - Drs Judy and Hoffman – protocol and analysis sections
 - Drs Crapo and Washko – clinical context section
 - Drs Crapo, Lynch and Coxson to develop statistical paragraph to be added to current Claim language
- Next call scheduled for March 30th at 11 am CDT