QIBA COPD/Asthma Phantom Design Subcommittee
February 18, 2010
2 PM CST

Call Summary

In attendance
Philip Judy, PhD (co-chair)  RSNA Staff
Andrew Buckler, MS  Susan Anderson, MLS
Zachary Levine, PhD  Joe Koudelik

RSNA Staff

General Discussion
• COPD investigators feel current CT problems deal primarily with CT scale and phantom fill materials (foam too uniform) to reproduce CT numbers
• 2D version of branched lung embedded in plastic proposed; 3D control of foam bubble very challenging

Lung Density vs. Airway Morphology Priorities
• May be sufficient to address lung density issues at this time
• Need to examine higher context to recognize differences between density and airway measurements; a simple calibration solution may not be possible
• Dr Judy to review available data to better understand longitudinal studies at approved dose levels – may lead to developing procedures focusing on density
• Data available:
  o COPDGene Data (5mm sections)
  o Eclipse Cases (thin and 5mm sections)
  o NLST cases (thin and reconstructed thick sections)

COPDGene Phantom Modification Update (Dr Judy)
• Dr Judy scanning COPDGene modification (annulus) received from Mr Levy of Phantom Laboratory
• Measurements show consistency across six different scanners
• Air inside annulus air hole appears similar, or slightly lower, to outside (in foam fill); air in holes show a lower density then expected which is not consistent with hypothesis
• Annulus to be scanned with the ACR accreditation phantom using COPDGene protocols; ACR phantom allows broader range of CT numbers

New members joining group
• Per Bakke, MD, PhD - European expertise with COPDGene project
• Susan Wood, PhD - CEO of VIDA Diagnostics - algorithm experience

Next Steps:
• Density and Hardware issues
• Dr Levine sending DVD of UPenn phantom scans to Dr Judy for review
• Limitations upstream that make compromises, e.g. Siemens Sensation 64 scanner, may cause issues
• Next call scheduled for March 4th, 2010 at 2 PM CST (3 PM EST)