QIBA COPD/Asthma Technical Committee Update Call
Tuesday, August 4, 2009
11 AM CDT
Call Summary

In attendance:

Daniel C. Sullivan, MD (Moderator)  
Andrew Buckler, MS  
David Clunie, MBBS  
Harvey Coxson, PhD  
Eric Hoffman, PhD  
Philip Judy, PhD  
Zachary Levine, PhD  
David Lynch, MD  
Michael McNitt-Gray, PhD  
Hrudaya Nath, MD  
Ehsan Samei, PhD  
Edwin Silverman, MD, PhD  
Fiona Miller  
Susan Anderson, MLS  
Joe Koudelik

General Discussion:

Purpose of this call was twofold:

• Broaden the group discussion and include new member orientation
• Begin the work to move subcommittee forward

QIBA COPD/Asthma Technical Committee Structure

• Title proposed to broaden this QIBA technical committee’s focus: “QIBA COPD/Asthma Technical Committee”
• COPD to run in parallel with, but report back, to the QIBA Volumetric CT Technical Committee
• Identify issues, identify work already done, define experimental groundwork
• Need to identify a forward process and how much effort is required with a broad vs. narrow scope
  o Narrow scope – work moves fast
  o Broad scope – need many interested parties – slower movement – more effort
• CT phenotype and evaluation assessment judged to be within scope
• Ancillary quantitative studies would also be worth pursuing
  o e.g. cardiovascular, which already contains quantitative data
• Fundamental morphologies and density questions are common interests between QIBA Vol-CT and COPD

Key COPD Issues

• COPDGene phantom development with findings
  o How to utilize the phantom to determine imaging site qualification
• Airway wall measurements and their limits
• Subject size and how to adjust for differences
• Variability between scanners from different manufacturers
• Variability of measurements – data for power calculations so that others could properly size their studies
  o Measurement and observer variability already being addressed by QIBA
• Industry representation is another key component
  o Need major equipment manufacturers and pharma representation

COPD Committee to design Profile and Claims in terms of airway wall thickening
• Much complementary work done between COPD and asthma on airway wall measurements
• Claims to be based on specific pathway process, not disease name, e.g. parenchyma airway quantitation, high/low density, inflammatory lung disease, interstitial lung disease, etc
• QIBA Vol-CT Profiles underway
  o Late stage lung cancer is the primary focus of Vol-CT Tech Committee
  o Early stage lung cancer has profiling has begun
  o COPD (with asthma) will be the third Profile in development

Mr Andrew Buckler’s QIBA Slide Presentation – Overview

QIBA goals are pursued via system engineering activities in attempts to determine sources of scanner bias and variability while increase quantitative analysis power per subject

RSNA’s interest in quantification:
• RSNA is interested in fostering more emphasis on quantitative imaging in clinical care and facilitating imaging as a biomarker in clinical trials (slide 1)
• Four reasons RSNA is emphasizing quantification (slide 2):
  o The evolution towards molecular medicine (personalized medicine) requires quantitative test results
  o Progression towards evidence-based medicine depends on more quantitative clinical data
  o Decision-support tools (AI) need quantitative input
  o Pay-for-performance plans need to be based on objective metrics
• Endpoints being pursued (slide 8)
  • Long Term Goals
    o Exploit quantitative imaging biomarkers as surrogate end-points for disease progression and characterization
  • Specific Aims
    o Develop methods and processes for accurate and reproducible measurements of biologically relevant processes
  • Stakeholders
    o FDA, NCI, NIST, ACRIN, Imaging Vendors, Software Companies, CROs, extended PhRMA Imaging Group, and leading academic centers
• Three QIBA Technical Committees based on modalities, each co-chaired by representatives from Device Manufacturers, Pharmaceutical Industry and Academia (slide 10)
  • Fluorodeoxyglucose Positron Emission Tomography (FDG-PET/CT)
  • Dynamic Contrast-Enhanced Magnetic Resonance Imaging (DCE-MRI)
  • Volumetric Computed Tomography (Vol-CT)
    o The initial Vol-CT focus is to be broadened to include COPD
Upcoming COPD-related meetings
- Aim to hold committee meetings in conjunction with existing COPD-related meetings
- Need to meet with other established COPD-related committees, e.g. American Thoracic Society meeting and pre-ATS meeting(s)

Moving Forward
- Need to define what the COPD committee will work on
- What needs to happen to clarify existing issues?
  - Identify a number of topics for future discussion e.g.,
    - Airway wall measurement/limits
    - COPD Gene Phantom work
    - Subject size
    - Variability/Power calculations
    - Spirometry
- Need more discussion concerning venue and process
- Conference calls leading up to a future 1.5 day long face-to-face meetings proposed
- Transition from monthly to bimonthly calls, eventually settling on a weekly call schedule
- Need to assemble reference/foundational documents and identify items requiring scientific work/pursuit
- Consider f2f meeting in conjunction with existing COPD-related meeting(s)

Next Steps:
- Follow-up t-con to be scheduled (Sept 1, 2009)
- Start QIBA-COPD Profile, begin with groundwork activities
- Dr David Lynch to develop charge proposal for this new tech subcommittee
- Circulate any reference/foundational documents among group members
- QIBA-COPD Quantitative Analysis mailing/distribution list to be created and forwarded to members
  - Mr Kevin O’Donnell to be added to the roster for Profile development (later date)
  - Sean Fain (WI) to be invited to join subcommittee
  - Solicit additional COPD group members; send names to RSNA staff (jkoudelik@rsna.org)
  - Names suggested by participants: Joyce Schroeder, John Newell, George Wasco