

QIBA vCT Technical Committee Weekly Update
Monday, September 28, 2009
11 am CDT

Call Summary

In attendance

P. David Mozley, MD (Co-Chair)
Daniel Sullivan, MD (Moderator)
Maria Athelougou, MD
David A. Clunie, MBBS
Patricia Cole, PhD, MD
Charels Fenimore, PhD
John Fraunberger
David Gustafson, PhD
Philip F. Judy, PhD

Kevin O'Donnell
John Michael O'Neal, MD
Anthony Reeves, PhD
Mathias Thorn, PhD
Hiro Yoshida, PhD

RSNA staff

Susan Anderson, MLS
Joe Koudelik

Agenda (Mr Buckler)

- Group updates
- Volcano study update
- COPD efforts

Group 1 A update

- Dr Petrick is continuing work on data
- Image analysis at RadPharm to begin November 2009

Group 1C update (Dr Fenimore)

- Recent discussion with medical physicists at several sites on data collection protocols and inclusion of some phantoms that may help determine edge response which would be of use to algorithm developers for volumetric assessment
- Finalizing recruitment of sites where we will collect images
 - Sites:
 - Duke (GE)
 - FDA (Philips)
 - Johns Hopkins (Toshiba)
 - Baltimore (Siemens)
 - Discussion with Dr Eliot Siegel about Philips 16 row scanner
- Finalizing acquisition protocol; need more medical physics input from imaging sites
- Dr Fenimore will visit RadPharm at the end of October 2009 and will discuss protocol and mark-up schedule

Volcano study update (Dr Reeves)

- Preliminary results presented recently at MICCAI meeting
- Dr Reeves can provide preliminary results paper which summarizes basic performance and classes of data (zero change, slice thickness, change data)
- Working on main paper analyzing data; used non-parametric statistics
- May recruit 1-2 more sites which will provide more data

- Images are still available
- Discussion of findings:
 - There was more agreement between computer methods (approx 17 different methods) than has been seen between humans
 - In Zero Change, preponderance of methods showed changes between T1 and T2; may be due to scanner recon algorithms
 - There was more change in data than expected (approx 20%); computer methods measuring this change agreed
- Next step will be a manual marking study with human readers to compare to machine readings

COPD/Asthma committee (Dr Judy)

- Have posted draft matrices for Density and Morphology/Airway Size
- September 17 call on phantom designs:
 - Some enthusiasm for COPDGene phantom which was designed for QA; there are multiple copies at many sites
 - Interest in using as a reference standard but has some limitations
 - Foam lung material bubbles are very small; impacting slice thickness readings
 - Dr Levy is sending Dr Levine a foam sample for microCT analysis
 - ECLIPSE trial uses a phantom manufactured by Kyoto Kagaku
- Committee members will continue work to define Claims statements
- COPD/Asthma ctte members attending ACRIN will meet 5-6pm on Wednesday, Sept 30

Profile update (Mr O'Donnell)

- Have updated and converged lung nodule VolCT material to UPICT protocol template and is continuing work on combined versions
 - The UPICT template will detail what is to be accomplished
 - The QIBA Profile will have more details on cross-validating equipment and sites
- Mr O'Donnell led group discussion on changes, placeholders and questions in converged Profile and incorporated changes into working version
 - Section 7.1.1: Group 1C will address noise and spatial resolution metric
 - Section 9.2: Leave door open to include acquisition and analysis steps; may need to include specific response criteria
 - Consider a focus on repeatability and detectability
 - Issue of how much boiler plate language to insert, e.g. personnel qualifications
 - How much detail is needed for "local standards?"

Next Steps:

- Schedule Group 1C call
- Dr Reeves to provide preliminary Volcano results paper (URL) which summarizes basic performance and classes of data
- Dr Levy (Phantom Labs) to send Dr Levine a phantom foam sample for microCT analysis