

## QIBA Quantitative CT Committee Update

Monday, March 15, 2010

11 AM CST

### Call Summary

#### In attendance

Andrew Buckler, MS (co-chair)  
P. David Mozley, MD (co-chair)  
Kristin Borradaile, MS  
David A. Clunie, MBBS  
Charles Fenimore, PhD  
John Fraunberger  
Philip F. Judy, PhD  
Grace Kim, PhD  
John Lu, PhD  
Michael McNitt-Gray, PhD  
Kevin O'Donnell

Nicholas Petrick, PhD  
Anthony P. Reeves, PhD  
Yuanxin Rong, MD, MPH  
Daniel C. Sullivan, MD  
Hiro Yoshida, PhD

#### RSNA

Susan Anderson, MLS  
Joe Koudelik

#### *Optics Express* Paper Update (Mr Buckler)

- Data has been organized and links created, but process has proven difficult
- Few action items remain for Drs Fenimore, Reeves and Zhao
- Mr Avila pursuing absolute value measurements; missing CT slice in data series may have caused issues
- Dr Fenimore and Mr Avila to follow-up with possible fix off-line
- Dr Petrick to replace missing data with 10 HU data
- Dr Fenimore to send spreadsheet of slice thickness series data to Dr McNitt-Gray

#### QIBA Q-CT Ctte Abstract Submission for RSNA 2010 (Dr Petrick)

- Still gathering data/results for Group 1A study; abstract being developed; "Synthetic" term to be included in abstract title
- Presenting all results as one group proposed; comparing three different measurement methods
- Measurement techniques not related; each group averaged to their known truth, not to same values, e.g. linear measurements 1D to 1D / 2D to 2D / 3D to 3D - normalized analysis done
- Lesion orientation and shape within CT sections shows direct clinical relevance
- Slice thickness offsets bias for 3D data, but not as much for 1D or 2D; standard deviation deemed more relevant than bias here
- Need to identify subset of data to determine variance
- Most acceptable way to compare measurements still needed, that which QIBA recommends
- Regression analysis to be included
- Caution by the pharmaceutical industry not to associate 1D directly with RECIST or 2D with WHO
- Greater variance deemed with 1D than 3D measures
- Target audience primarily to be clinical, secondary will be research and industry
- Separation of analysis based on lesion shape proposed; spherical, elongated, lobulated, spiculated
- Multiple abstracts possible due to wealth of analysis and subgroup data; clinical and medical physics sections/focus proposed

- Abstract to include general conclusion with more details presented at RSNA
- Abstract submission deadline for RSNA is April 15, 2010 (Noon CT)

#### Thresholding

- Claim based on uncertainty (e.g. noise) and leads to threshold
- Threshold to declare real change that's medically meaningful
- QIBA to define that which distinguishes true biological change in noise for measurement; what is biologically relevant and distinguishable from noise
- Interpretation is what contributes to thresholding; pharmaceutical pushback possible
- Group 1A study may not derive this biological
- 1A – context of why QIBA pursuing this

#### Next Steps

- Profile and protocol development
- FDA Briefing Documents
- Next call scheduled for Monday, Mar 22 at 11 am CDT