

QIBA Vol-CT Weekly Update WebEx
November 3, 2008, 11am CDT
Call Overview

In attendance:

Andrew Buckler, BSEE, MSCS (Co-Chair)
P. David Mozley, MD (Co-Chair)
Rick Avila, MS
Martin Barth, PhD
Ekta Dharaiya, MS
Charles Fenimore, PhD
Robert Ford, MD
David Gustafson, PhD

Wendy Hayes, DO
Michael McNitt-Gray, PhD
James Mulshine, MD
Kevin O'Donnell
Nicholas Petrick, PhD
Daniel Sullivan, MD
Linda Bresolin, PhD, MBA, CAE (RSNA)
Joe Koudelik (RSNA)

General Discussion

Dr. Mulshine provided an overview of his image process issues table

- Article referred to – a clinical and prognostic basis for screening
 - The IASLC Lung Cancer Staging Project: Proposals for the Revision of the TNM Stage Groupings in the Forthcoming (Seventh) Edition of the TNM Classification of Malignant Tumours, *Journal of Thoracic Oncology*, Vol 2, Number 8, August 2007
- Main thrust was that imaging requirements change depending on cancer staging
- Stage II, III, IV comprise 85% of the lung cancer burden in the US
 - Early vs. late stage disease
- Separating issues based on stage is important
 - Technical challenges vary with stage
 - Health environment contribution also needed
- Prioritizing for action will be difficult
- Adding two more columns to Dr Mulshine's table suggested
 1. Number of patients presenting at each stage
 2. Median survival at each stage
 - Fraction of CT scans associated with each stage would be useful to instrument manufacturers

Subcommittees given technical assignments (1A, 1B, 1C)

- More clinical relevance would make a stronger argument
- Pursue validation/profiles in parallel
- Patients are our primary concern; stakeholder are secondary
- Advanced vs. early stages changes many parameters
- Need to bridge details with the bigger picture
- Need both high-level and detailed discussions

Precision vs. Accuracy

- Precise change measurements needed by Pharma (per Dr Mozley)
- Precision and change analysis (ie, same phantom across various sessions) within groups 1A, 1B and 1C important
- Accuracy not as relevant as precision
- FDA regulators need precision, not accuracy

- Multiple readers to estimate volume, but precision is more useful by Pharma
- No absolute volume with multiple readers, but precision and change analysis in clinical trials would be useful

Subgroup status reports

1A (Dr Petrick)

- Data acquisition stage
- Precision is predominant here
- Start trial in January 09
- Should be done by early 2009
- Readers in place -- Mindful of reader load (not to burn out)
- Continue 1A as designed -- Keep intact and push forward to finish

1B (Dr McNitt-Gray)

- Patient datasets to be used
- Exploring available data
 - Coffee break/RIDER/LIDC – data considered
- No sizing of timeframes discussed yet
- Group in design and refining stages

1C (Dr Fenimore)

- Dr Fenimore to draft technical objectives -- a detailed planning document
- Phantom study/data focus – based on controlled means to explore sources of variability
- Need to address scope of problem first
- Data collection to start later
- LIDC Single time-point study

Part 1A and 1B not related to patient outcomes

Merck dataset may not include best practices, but outcomes data is very useful

1B and 1C to be based on both precision and change analysis

Pharma Datasets

- Logically at the end of the validation plan (stage)
- Economic and value benefits associated
- Parallel process possible
- Could be used for preliminary data
- Could be used to help justify existence
- Merck to donate data to RIDER (NIST like data broker)

Open source software

- Rick Avila (Kitware) provided an overview of Kitware's new open source lesion sizing tool kit
- Will be available by December 08
- Possibly a resource for QIBA
- Kitware wiki to post software soon
- Future t-con proposed to discuss software uses

How QIBA Stores Metrics

- Should QIBA archive metrics (ie, software performance)?
- NIST proposed – A benchmark (Nice starting point)
- Combined phantom volumetric data with clinical data
- Can build upon this framework

Next Week

- Status updates on groups 1A, 1B, 1C
- 1C (Dr Fenimore) to develop a detailed planning document (technical objectives)

ACTION ITEMS:

Rick Avila to send out wiki link to the Kitware lesion sizing software tool kit