QIBA VOL-CT Phantom Study Protocol Update WebEx
October 1, 2008
11AM CDT
Call Summary

In attendance:

Nicholas Petrick, PhD (Chair)
Charles Fenimore, PhD
Wendy Hayes, DO
Michael McNitt-Gray, PhD
Binsheng Zhao, PhD
Joe Koudelik (RSNA)

General Discussion
The group began by discussing what the overall goal or endpoint of "Group 1A" should be

- 1A project definition proposal still needed
- Determine the intra-, inter-variability of reader (human) data with software tools
- Phantom and software tools purely a beginning – if this fails, no need to move on to "real" tumors
- Study to begin with phantoms – a known truth (i.e., consistent)
- Clinical cases would be the next phase, based on results of phantom study

Probing for Software Performance-Current Software Limitations

- Current software not capable to perform at research extremes (ie, -630 HU data)
    - Algorithms set for more clinical cases based work
- Phantom must pass a minimum expectation with readers ("Entry Level")
- If software passed at the phantom level, move on to clinical studies
- This group to collect RECIST data to understand software performance relative to volumes
    - Need today's reference to determine performance
- Need a consensus on what these limits are to approve other software packages

Reader Usage Discussed

- Use small number of readers as efficiently as possible
- Don't overload the readers
- Short bursts, periodically, a good approach
- Drs. Ford (RadPharm) and Hayes graciously offered assistance with reading - additional discussion required concerning how to proceed

Basic Protocol Discussed

- 100 mAs or 200 mAs (to be determined)
- -10 and +100 HU only
- 2 slice thicknesses (1.25-1.5mm & 5mm) 0.75mm deemed too thin
- Various nodule shapes
- Multiple exposures
- 1 Recon kernel only (Group leaning towards "Standard" but Detail/Lung still under discussion)
- ~2-3 repeat scans
- 5-6 readers minimum to measure variability -- Save readers for parts 1B and 1C to follow
- 10-20mm spheres (instead of 5 and 10 mm) proposed to mimic clinically related data. Dr. Petrick to inventory amount of larger sphere data in-hand (from Wash U)
- Use of semi-automated tool – less time consuming for readers

Phantom data doesn't need to answer all issues concerning human data. Phantom could simply provide guidance to how human data should be studied.

Option to perform now

- Uni-dimensional/bi-dimensional measures possible
- Semi-auotmated volumetric tool
- Hand-tool to segment each slide
- Group leaning towards uni-dimensional & semi-automated volume measure but hand still under discussion

Action Items:

- Invite Robert Ford, MD to participate on next call (10/9/2008)
- Dr. Fenimore to share project design parameters for comment
- Pick alternate to discuss/lead meeting in Nick's absence
    - Nick traveling in Asia: 10/10-10/30/2008
- Next call scheduled for Oct 9 at 1PM EDT