

## QIBA Volumetric CT Colorado Group Project Update

Tuesday, November 8, 2011 at 11 am CST

### Call Summary

#### In attendance

Kavita Garg, MD (Chair)  
Hubert Beaumont, PhD  
Andrew Buckler, MS  
Paul L. Carson, PhD

David A. Clunie, MBBS  
Barbara Croft, MD  
Paul R. Garrett, MD

Grace Kim, PhD  
Anthony P. Reeves, PhD  
Ann Scherzinger, PhD

#### RSNA

Joe Koudelik  
Julie Lisiecki

#### Similar study and article: "Computer-Aided Volumetry of Pulmonary Nodules Exhibiting Ground-Glass Opacity at MDCT<sup>1</sup>"

- Purpose of the study was to investigate the accuracy and reproducibility of results acquired with computer -aided volumetry software during MDCT of pulmonary nodules exhibiting ground-glass opacity.
- **Conclusion of this study:** With computer-aided volumetry of ground-glass opacity nodules, the relative volume measurement error was small for nodules 5 mm in diameter or larger. Intra-observer and inter-observer agreement was relatively high for nodules 8 mm in diameter or larger. [Relatively low for larger nodules.] Slice thickness used for this study was 1 mm.
- Dr. Garrett volunteered to look for other helpful supportive articles and will email recommendations to the Colorado Group

#### Statistical Plan

- Dr. Kim to draft a statistical plan for Dr. Clunie to review once hypotheses/ plan are delivered
- Dr. Kim will analyze the data for the Colorado Group study
- Dr. Scherzinger to provide final hypotheses/ plan to Dr. Kim with corresponding figures
- Dr. Scherzinger is in the process of creating a data record sheet with parameters that will be used for the study:
  - Description of raw data, collection of results, and master index of readings (as compared to ground truth)
  - Dr. Kim to send draft of dataset format to Drs. Scherzinger, Garg, Miller, and Clunie for Colorado Grp use

#### Study Design

- Group plans to use non-solid lesions and low dose
- Group is interested in the parameters that vary with readers
- Want to measure automated value as well as change; Can analyze data using tool box approach
- Every paper that mentions reader variability mentions a different algorithm
- CO Grp study may lead to a better algorithm design
  - questionable whether 4 readers will be statistically sound for inter-reader variability
  - The project may contribute toward a public database for phantom imaging contribution

#### Phantom Truth

- Mr. Buckler is preparing a curated reference data set for the 3A Challenge
- Terms must be precisely defined to avoid confusion
- Group 3A will be using a universal ID that will work across all tabs in the larger spreadsheet and correspond with the lesion IDs

#### Next steps:

- Dr. Garrett to provide suggestions regarding part-solid nodule placement/measurement and literature review
- Dr. Scherzinger to revise final hypotheses and send to Dr. Kim with the plan/study design and corresponding figures
- Dr. Kim to send draft of dataset format to Drs. Scherzinger, Garg, Miller, and Clunie
- Colorado Group Team to: 1) Run the scans; 2) Review the statistical analysis plan; and 3) Revise the hypotheses document

#### Next Call: TBD.

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**Reference:** [Computer-Aided Volumetry of Pulmonary Nodules Exhibiting Ground-Glass Opacity at MDCT. \*American Journal of Roentgenology\*: 194:398–406, February, 2010. Oda, et al.](#)