

QIBA FDG-PET/CT SUV Technical Subcommittee Update Call
August 6, 2009 at 2 pm CDT
Call Summary

In attendance

Paul Kinahan, PhD (Co-moderator)
David Clunie, MBBS (Co-moderator)
Paul Christian
John Hoffman, MD
Steve Kohlmyer
Dennis Nelson, PhD

Eric Perlman, MD
Daniel Sullivan, MD
John Wolodzko, PhD

RSNA

Fiona Miller
Susan Anderson, MLS
Joe Koudelik

Agenda:

- Restate Subcommittee Charter
- Summarize Progress
- Determine Next Steps
- Preparations for RSNA 2009

General Discussion

SUV Technical Subcommittee

During the May 2009 f2f QIBA meeting in Chicago, Drs Kinahan and Clunie decided to combine their respective FDG-PET/CT subcommittees due to commonalities of charter and scope. The Digital Reference Objects and Quantitative Computation subcommittees merged to form the FDG-PET/CT SUV Technical Subcommittee.

Drs Kinahan and Clunie summarized a recent collaborative paper they jointly drafted which discussed obtaining quantitative PET SUV calculations from DICOM images.

- Test objects are needed to test the fidelity of image values on image stations (i.e. test beds)
- Proposed Digital Reference Object (DRO) Test
 - DRO Model to be based on the NEMA PET Imaging Quality Phantom which produces synthetically generated test objects (synthetic creation)
 - To be written-out as PET DICOM stacks/images
 - DRO object should be generated as early in the data chain as Can be used for scanner evaluation/validation
 - Requirements for SUV calculations and value to DICOM headers will be discussed on the next call
 - Two step process
 - Proof-of-principle – demo project needed
 - Implementation
 - Short term goals: Synthetically made-up DRO
 - Medial term goals: Hopes that manufacturers will generate DRO from scanners directly
 - Including 3rd party display station vendors

Uses

- DRO acts as “truth”
 - Once synthetic DRO data loaded on systems, can measuring ROI based on DRO to obtain test values
 - Can use ROI tools on various platforms to test their performance
- Question remains when and who will build DRO’s

Summary of Quantitation Computation Subcommittee

- Quantitative data submitted to manufactures a starting point; who to follow-up with discussions?
- Need to establish a regular meeting time for greater participation – schedule SUV call in three weeks time
- Collected first round of questionnaire answers which asked how SUV were being collected
 - Feedback to be used in generating DRO
- Manufacturer support is needed
- Designing a single DRO to mimic all manufacturer machines remains an issue
- First steps in building DRO:
 - Use Dr Kinahan’s table of DICOM headers
 - Dr Clunie will validate
 - Drs Clunie and Nelson will critique
 - Send to MIMVista, which has secure upload, for testing

Report for RSNA 2009

- QI IB Informational Meeting on Monday, Nov 30, 3:00-4:30pm
- CTSA/UPICT Meeting on Tuesday, Nov 31, 3:00-5:00pm
- QIBA Working Meeting, Wednesday, Dec 1, 2:00-4:00pm
- QIBA Kiosk in Education area with general and project specific poster space available
- Posters being displayed by each Tech Ctte

Next steps:

- Dr Kinahan to circulate his block diagram to the FDG-PET/CT TC
- Establish regular call schedule
- Next call on 8/27 at 2 pm CDT