

QIBA PET-Amyloid Biomarker Committee DRO Discussion

Friday, May 8, 2020 at 9 AM CT

Call Summary

In attendance:

Dawn Matthews, MS (Co-chair)

Anne Smith, PhD (Co-chair)

Darrin Byrd, MSc

Rachid Fahmi, MSc, PhD

Larry Pierce, PhD

RSNA

Joe Koudelik

Julie Lisiecki

Moderator: Ms. Matthews

Purpose of the call

- Dr. Smith (Siemens) and Ms. Matthews (ADMdx) tested the initial DRO on their respective SW platforms and found it to be acceptable
- They are trying to determine how to test the DRO to define common fields, e.g., SUVr, gray/white matter ratios, noise levels, etc. to develop a template for reportable values
- To determine whether there is an impact of different ROIs on measurements, they need to generate the entire “suite” of DROs

Per the latest version of the Profile:

The DRO Series

- The simulation of six subjects and five realizations means that the DRO series will contain 30 simulated PET volumes.
- These volumes will be stored in DICOM format, to be available for download from the Quantitative Imaging Data Warehouse (QIDW).

The SUVr ratios are specified as:

- Six uptake ratios (0.9 – 1.4) were used to produce 30 noise simulations/realizations (5 at each SUV)
- The final “suite” will have 30 sets of DICOM images.
- Since the DRO is the key to evaluating different types of software, BC leadership would like to determine when this suite could be ready for testing by Siemens and ADMdx, along with the entire DRO analysis process as outlined in the Profile, to see if it is both feasible and useful.

Action items

- Mr. Byrd to provide the original noise free reconstruction templates
- Dr. Fahmi to aid with the MR reference to guide spatial registration / normalization
- Dr. Obuchowski will be asked to review the DRO in terms of how truth is realized, with the underlying process
- Dr. Pierce to:
 - provide the binary mask and MATLAB files (raw data) that go with segmentations
 - inquire with Dr. Kinahan about obtaining clearance to provide the MRI PACS data (basis for measurements) to Dr. Smith, Dr. Minoshima, and Ms. Matthews to help them in understanding the process
 - provide all six no-noise, high-resolution DROs
- Dr. Smith or Ms. Matthews to add a note in the Profile indicating that the data are simulated to ensure that no questions are raised pertaining to HIPAA regulations

Next Steps (ongoing)

- Ms. Matthews to get in touch with Drs. Minoshima and Wahl regarding site testing
 - Actor-specific checklists to be distributed to participating sites
 - Ms. Matthews may also contact Drs. Sunderland and Subramaniam

QIBA Nuclear Medicine Schedule:

05/15	FDG-PET BC @ 1 pm CT	06/12	PET Amyloid BC @ 9 am CT
05/19	NM Coordinating Committee @ 1 pm CT	06/19	FDG-PET BC @ 1 pm CT
05/29	NM Leadership @ 9 am CT – TBD	06/26	NM Leadership @ 9 am CT – TBD
06/09	SPECT TC ^{99m} BC @ 2 pm CT		