QIBA CT Volumetry Technical Committee (TC) Update Call

31 March 2014 at 11 AM CT (GMT-5)

Call Summary

Additional Notes provided by Mr. Buckler

In attendance:

Samuel G. Armato III, PhD (Co-Chair)
Gregory V. Goldmacher, MD, PhD (Co-Chair)
Maria Athelogou, PhD
Hubert Beaumont, PhD
Andrew Buckler, MS
Matthew Fuld, PhD
Lubomir Hadjiiski, PhD
John Lu, PhD
James Mulshine, MD
Reginald Munden, MD
Michael O'Connor, PhD
Kevin O'Donnell, MASc
Adele Peskin, PhD
Nicholas Petrick, PhD
Daniel Sullivan, MD
Ying Tang, PhD
Pierre Tervé, MS
Luduan Zhang, PhE
Binsheng Zhao, DSc

RSNA:
Joe Koudelik
Julie Lisiecki

Discussion of Reference Data from Image Analysis Sub Group/ Group 3A:

- How they are to be used, curated, procured, etc.
- Algorithm and user relationship, with a focus on what decisions need to be made to move things forward
- Technical committee to vote on the following by April 7th via a survey link provided by Mr. O'Donnell
    - Decision 1: Compliance test for the analysis tool
        - Question as to whether or not a site/ actor can be independently compliant
    - Decision 2: Determination of user compliance

Questions remaining regarding reference data

- What reference data already exist to validate compliance procedures based on a whole body claim?
- What amount of reference data is needed for compliance?
- How value is brought to the drug development process and what benefits exist for Pharma?

Below is a list of "axes" in developing an appropriate group of reference data sets:

- disease taxonomy (e.g., NSCLC vs. lymphoma vs. hepatocarcinoma vs. …)
- primary vs. disseminated
- early vs. late/advanced
- anatomic site (e.g., lung vs. liver vs. pancreas vs. …)
- lesion characteristics (e.g., solid vs. part-solid vs. diffuse; attached vs. solitary, …)

The context for use in essence covers a "space" with such axes and statistically rigorous criterion could be applied to identify the completeness of any given collection of reference data sets. Then, a collection with sufficient redundancy that it may be sampled as part of a sequestered test set allowing multiple uses without being subject to overtraining criticism would layer a-top. A "refresh" policy providing for adequate test data over time would also be a consideration.

Possible solutions discussed

- Software used by Drs. Peskin and Samei allow overlapping clinical images with synthetic lesions to create sequestered data for reference
    - Use of the QIBA 1A and 1C data sets, in addition to the lessons learned from QIBA 3A may be a starting point
    - Not yet determined whether this approach would satisfy the compliance section of the Profile
    - Additional funding and manpower would be needed
- Group reminded that the Profile must be driven by clinical presentation of disease
- Mr. O'Donnell to distribute re-formatted claims in Metrology language for discussion on next technical committee call

Reminder regarding funding proposals – concepts due April 7th

- Consideration of the creation of sequestered data as a possible funding proposal
- Projects need to be driven by the clinical presentation of disease, e.g., primary vs. metastatic tumors, progression of disease, issues of measurability, etc.

Action items:

- Technical committee to vote on the issue(s) by **April 7th** via a survey link provided in an email on 3/31.

Next calls:

1) Monday, April 7, 2014 at 11 am CT: **Image acquisition hardware and reconstruction software**

2) Monday, April 14, 2014 at 11 am CT: **Image analysis** (both software and human analysts/readers)
3) Monday, April 21, 2014 at 11 am CT: **Full Technical Committee**: Final updates from sub-workgroups