QIBA Multi-parametric Metrology TF Call
16 November 2020 at 2 PM CT
Call Summary

In attendance   RSNA

Nancy Obuchowski, PhD (Chair)   Maryellen Giger, PhD   Erich Huang, PhD   Joe Koudelik

Huiman Barnhart, PhD   Alexander Guimaraes, MD, PhD   Gene Pennello, PhD   Julie Lisiecki

Andrew Buckler, MS   Timothy Hall, PhD   Daniel Sullivan, MD

Patricia Cole, PhD, MD   Charles Hatt, PhD   Ying Tang, PhD

Jana Delfino, PhD   Bernice Hoppel, PhD   Xiaofeng Wang, PhD

Nandita deSouza, MD

Moderator: Dr. Giger

Approval of Call Summary
- The notes from November 4, 2020 were approved as presented

Background for the discussion:
- Dr. Giger had reviewed the Overview paper and had some comments and different views on some of the definitions being used; so, Dr. Obuchowski invited her to present her perspective to the group.

Overview Paper Discussion: (Dr. Giger) – Topics discussed included:
- AI is needed to evaluate tasks, including those for the radiologist
- AI is the algorithm, whereas CAD is computer-assisted diagnosis, an example of how AI is used in clinical practice
- In terms of a biomarker, we want to evaluate not just the standalone marker but how it is used, i.e., the biomarker must be clinically useful to be accepted
- There may not be a need for use case #4, as it may be a mechanism for feeding the other use cases, utilizing filters, such as "features," "classifiers," "derived biomarkers," etc.
- The idea of a derived biomarker was debated
- The definition of a biomarker was discussed, as well as biologically vs. data-driven biomarkers
- Use case #4 feeding use case #3, as risk prediction is based on being able to relate single or multiple biomarkers to a risk factor, e.g., density or parenchymal texture as an indicator of breast cancer risk
- Questions to the group:
  - What is use case #4 now? How should it be defined?
    - Could it be an extension of use case #1?
    - Is use case #4 equivalent to data-driven biomarkers?
      - Use cases #1-3 were conformed as bio-driven biomarkers
    - This will require further discussion.
- As there was no time for Dr. Wang's Use case #4 presentation, Dr. Obuchowski will follow up with him about rescheduling

Action item:
- Mr. Buckler will lead the next Use Case #2 call by walking the group through a cardiac example

Next call: Use case #2 (Dr. Delfino) on Wednesday, Dec. 9th at 2 pm CT

Call Schedule: schedule has been adjusted as of 11/16 – Presenters: please review.

Date:	Topic:	Lead:
Monday, Nov 23? (2 pm CT)	Use case 4: Radiomics	Dr. Wang
Wednesday, Dec 9 (10 am CT)	Use case 2: Phenotype classification	Dr. Delfino
Monday, Dec 21 (2 pm CT)	Use case 3: Risk prediction	Dr. Huang

Monday, Jan 4 (2 pm CT)	**Use case** 4: Radiomics	Dr. Wang
Wednesday, Jan 20 (10 am CT)	**Use case** 1: Multi-dimensional descriptor	Dr. Raunig

Use cases:

- **Use case 1**: (Multi-dimensional descriptor) a panel to determine how to care for a patient
- **Use case 2**: (Phenotype classification) rule or decision tool to diagnose phenotype
- **Use case 3**: (Risk prediction) several biomarkers will be evaluated to create a prediction or risk score
- **Use case 4**: (Radiomics) may not have a specific biomarker for reference

Monday, Jan 4 (2 pm CT)	**Use case** 4: Radiomics	Dr. Wang
Wednesday, Jan 20 (10 am CT)	**Use case** 1: Multi-dimensional descriptor	Dr. Raunig