QIBA Multi-parametric Metrology Call
6 April 2020 at 2 PM CT
Call Summary

In attendance

Nancy Obuchowski, PhD (Co-Chair)
Huiman Barnhart, PhD
Michael Boss, PhD
Andrew Buckler, MS
Patricia Cole, PhD, MD
Jana Delfino, PhD
Erich Huang, PhD
Rudresh Jarecha, MBBS, DMRE, DNB
Marina Kondratovich, PhD
Chaya Moskowitz, PhD
Gene Pennello, PhD
David Raunig, PhD
Daniel Sullivan, MD
Xiaofeng Wang, PhD

RSNA
Joe Koudelik
Julie Lisiecki

Moderator: Dr. Obuchowski

Use Case 4: Radiomics (Dr. Wang)

- Dr. Wang provided an overview of his draft white paper on radiomics
- Discussion topics included the following:
  1. The nature of QIBA Profile claim statements
  2. What work needs to be done to develop the claim (include literature survey, gap analysis)
  3. What studies should be done to test conformance to claims
  4. How to properly carry out these methods
     a. Discussion of the analysis flow chart for radiomics
  5. Illustrate methods with an example (include stakeholders' perspective)
     a. Real case study: CT Radiomics in Pulmonary Nodule Malignancy Prediction in Lung Cancer Screening
  6. Challenges unique to this use case

Discussion of various definitions of Radiomics:

Radiomics: The practice of converting images into data that can be mined to develop models that may potentially improve diagnostic, prognostic, and predictive accuracy.

[Gillies RJ, Kinahan PE, Hricak H. **Radiomics: Images Are More than Pictures, They Are Data**. *Radiology*. 2016 Feb;278(2):563-77. doi: 10.1148/radiol.2015151169. Epub 2015 Nov 18.]

[to cite: Gillies RJ et al.] ***Radiomics is defined as the conversion of images to higher-dimensional data and the subsequent mining of these data for improved decision support.***

- Dr. Raunig will moderate the next call on Wednesday, April 22nd at 10 am CT, and give a presentation on phenotype classification (Use case 2)

Call Schedule:

Date:	Topic:	Lead:
Wednesday, April 22 (10 am CT)	**Overview paper**	Dr. Obuchowski
Monday, May 4 (2 pm CT)	**Use case** 1: Multi-dimensional descriptor	Dr. Raunig
Wednesday, May 20 (10 am CT)	**Use case** 2: Phenotype classification	Dr. Delfino
Monday, June 1 (2 pm CT)	**Use case** 3: Risk prediction	Dr. Huang
Wednesday, June 17 (10 am CT)	**Use case** 4: Radiomics	Dr. Wang

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