

## QIBA PET Myocardial Blood Flow (MBF) Biomarker Committee (BC)

Monday, March 13, 2023, at 9 am CT

Call Summary

### In attendance

Robert deKemp, PhD (co-chair)

Jonathan B. Moody, PhD (Co-Chair)

Ian S. Armstrong, MPhys, MSc, PhD

Charles Hayden, BS, MSEE

Nancy Obuchowski, PhD

John O. Prior, MD, PhD

### RSNA Staff

Julie Lisiecki

**Moderator:** Dr. Moody

### The following topics were discussed:

- Overview of Profile draft

### Discussion

- Reviewed comments from Dr. Armstrong and discussed flow reserve within subject coefficient of variation (wCV)
- sCV for rest and stress add in Quadrature
- Rest and stress flow can be correlated which can reduce the wCV for MFR lower than expected
  - Rest and stress are independent variables, whereas MFR is a dependent variable
- wCV is being used to determine the precision on the measurement, a measure of change over time
  - This utilizes within subject variability, assuming that anything else is due to real change
- wCV for MFR was lower than the rest flow, though this seems counter-intuitive
- Include frame of reference time for measurements
- Convert counts to counts per second by dividing by the frame duration
- Determine what steps are needed to assess the quality of the dynamic series for the claim
  - Dynamic image quality assistance, quality of fit
    - Aim for minimal patient motion
- Provide guidance for a more standardized assessment procedure
  - Ensure that the scan was started on time, so that the full rise, starting from baseline is captured
  - Guidance needed for time-activity shape requirements (input function)
  - Take LV myocardium segmentation into consideration
  - Review pre kinetic modeling and post kinetic modeling to find a quantitative cut off point

### New action items:

- [Dr. deKemp](#) to provide names and email addresses of new members to be added
- **All** – Make a list of important QA steps for before and after fitting; to discuss on next call
  - Think about image header, reconstruction, physician responsibilities, and analysis paradigm
- **All** – Continue to review Profile draft and Checklist examples from other Profiles
- **All** – Choose sections based on your expertise to make comments and edits
- Expertise is needed in determining the measurement requirements; input needed from MBF device developers and users (Profile Section 3: Activities and Actors)

### Ongoing action items: (please strike if complete)

- [Mr. Hayden](#) to provide some comments in a marked-up version to Drs. Moody and deKemp
- [Dr. Moody](#) to draft publication based on Dr. Obuchowski's meta-analysis on MBF repeatability
- [Dr. Moody](#) to start drafting the Radiologist (Actor) checklist per the [streamlined Profile template](#)
- [Dr. Moody](#) to work on protocol design tables and share papers to shared drive
- [Dr. deKemp](#) to craft a bias table and review the linearity plot, looking at  $K^1$  vs. flow values
- [Dr. Moody](#) to work on a DRO model; will look at QIBA work with DCE-MRI
- Review needed for 3.3 Product Validation, 3.4 Periodic QA, and 3.7 Pharmaceutical Administration
- Dynamic phantom scan protocol in Section 4 Assessment Procedures to be fine-tuned by Dr. Moody

**Next Call:** [March 27, 2023](#), at 9 am CT (2<sup>nd</sup> and 4<sup>th</sup> Mondays) at 9 am CT

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Parties interested in joining the [QIBA LinkedIn](#) page for QIBA updates should visit: <https://www.linkedin.com/company/rsna-qiba>

#### **QIBA Process Committee Resources**

- **Process Committee Leaders:** [Kevin O'Donnell, MASC](#) (Chair) | [Michael Boss, PhD](#) (Co-Chair) <mailto:mboss@acr.org>
- **Wiki Resources:** [Dashboard](#) | [Profiles](#) | [QIBA Profile template](#) | [How to Write a QIBA Profile](#) | [Claim Guidance](#) | [Vetting requirements](#)
- **Inventory of QIBA tools:** [QIBA LinkedIn page](#) (please join / follow) | [QIBA News](#) | [QIBA Community](#)
- **Other:** [QIBA Webpage](#) | [QIBA Wiki](#) | [QIBA Biomarker Committees](#) | [QIBA Organization Chart](#) | [Dropbox](#)
- **EndNote:** To obtain access to the RSNA EndNote citations, please email: [sstanfa@rsna.org](mailto:sstanfa@rsna.org).