

QIBA Ultrasound Shear Wave Speed (SWS) Biomarker Committee (BC)

Friday, June 17, 2016; 11 AM CT

Draft Call Summary

In attendance

Brian Garra, MD (Co-Chair)	Elaine Collins, RDMS	Nicolas Rognin, MSc, PhD
Andy Milkowski, MS (Co-chair)	Manish Dhyani, MD	Stephen Rosenzweig, PhD
Paul Carson, PhD	Joel Gay, MSc	Anthony Samir, MD
Jun Chen, PhD	Gilles Guenette, RDMS, RDCS, RVT	Suraj Serai, PhD
Shigao Chen, PhD	Kathy Nightingale, PhD	Matthew Urban, PhD
Yuling Chen, PhD	Mark Palmeri, MD, PhD	Keith Wear, PhD

RSNA

Julie Lisiecki

Moderator: Dr. Garra

Review of April 22nd US SWS BC call notes

- Notes were approved as written

Systems / Phantom Task Force Update (Dr. Palmeri)

- Dr. Hall has taken measurements of the Phase II phantoms for the written report
- MRE-related measurements demonstrated some temperature dependence
- Temperature-dependence analysis experiments were performed on the phantoms, utilizing a water immersion bath
- Repeated measurements were taken after immersion in the water baths
- Dr J. Chen performed similar temperature dependence experiments at Mayo using two different ambient air temperatures: 74 °F (high) and 68 °F (cool / scanner room)
 - Phantoms were left in a warmer room overnight and measured
 - The temperature of the phantom was also recorded
 - The goal is to demonstrate reproducibility from these repeated scans
- A draft report is being prepared and will likely be circulated mid-July
- The final report will be formatted in a two-part manuscript to reflect different study designs
- Decisions must be made regarding what to do next about the temperature-dependence questions
- MRE may be a possible reference for Profile compliance once remaining questions are resolved

Simulation Data / Digital Phantom (Dr. Palmeri)

- There has been a recent uptake in digital phantom use; eleven unique downloads were recently completed
- Confounding factors have not been uploaded yet; however, it is encouraging that this resource is being used

Clinical Task Force (Drs. Samir and Dhyani)

- A few manuscripts are in preparation
 - These will be shared and reviewed with the BC members prior to submitting for publication

Profile Writing Group Update (Dr. Dhyani)

- Dr. Dhyani provided a brief overview of **Open Issues for the Profile**, which include:
 - Effects of inflammation on SWS and magnitude
 - Number of measurements remaining that need to be standardized (more evidence needed)
 - Criteria for inclusion or exclusion of a given measurement?
 - Repeatability vs. reliability?
 - Decreasing variance may result in increased bias
 - Must consult with Dr. Obuchowski

- Which type of phantom should be used for periodic QA and conformance (Section 3.3 of the Profile)
 - Viscoelastic vs. Elastic phantom?
- Temporal stability?
 - Recommendations and supporting documentation to be determined
- Long term verification of phantoms and stability testing
 - Acoustic focus and acoustic output for phantoms, according to manufacturer's procedures and proper storage techniques
- Pass/ fail tolerances for phantom tests
 - Testing to be performed at 21 ± 1 °C
- Variability among patients due to intrinsic, pathologic issues
- Feedback from manufacturers regarding how outliers in images are identified and displayed
 - Work toward suggesting specific standard handling (Section 3.7)
- ROI Size – If user selected, how large of an area to select?
 - Size of homogenous region vs. variance
 - Comments disagree; Manufacturers must be queried for consensus
- Number of values averaged for each pixel in the color image
 - Image reconstruction section of the Profile
- DICOM conformance
 - Are new header fields needed?
 - Must query Mr. O'Donnell
- What is the best method to acquire measurements from patients where the intercostal approach is not possible (narrow intercostal spacing or COPD)?
- Define range of SWS values at which the claims apply
 - Dr. Palmeri to add range based on phantoms study – with a caveat that higher values may be obtained in cirrhotic patients and may also have greater variability
- Feedback is welcome to Drs. Dhyani and Garra: Dhyani.Manish@mgh.harvard.edu; bgarra@gmail.com

Round-6 US Project Priority

- The CC leadership has decided that their priority will be SWS proposals that will aid with Profile completion.
- Final selections will be made soon after the July 21st QIBA Steering Committee meeting; PIs will be notified mid-August

JUNE and JULY US WebEx / Conference Schedule	
<p>June WebEx:</p> <ul style="list-style-type: none"> ● Jun 24: CEUS BC <hr/> <p>July WebEx:</p> <ul style="list-style-type: none"> ● July 01: Systems/ Phantom Task Force ● July 08: Clinical Task Force ● July 15: US SWS BC ● July 29: CEUS BC 	<p>Conferences/ Meetings:</p> <ul style="list-style-type: none"> ● July 31 – Aug 4: American Association of Physicists in Medicine (AAPM), (Washington, DC)