QIBA Ultrasound Shear Wave Speed (SWS): System Dependencies Subcommittee
Friday, March 8, 2012; 11 AM CT
Call Summary

In attendance

Mark Palmeri, MD, PhD (Co-Chair)
Keith Wear, PhD (Co-Chair)
Paul L. Carson, PhD
Shigao Chen, PhD
Liexiang Fan, PhD
Christopher Hazard, PhD
Michael MacDonald, PhD
Stephen McAleavey, PhD
Kathy Nightingale, PhD
Hua Xie, PhD

RSNA
Joe Koudelik
Julie Lisiecki

Moderator: Mark Palmeri, MD, PhD

Notes provided by Dr. Palmeri

- **Call summary from previous teleconference approved with no comments.**
- CIRS phantom studies
  - Some sites have not reported data yet, so no absolute values for SWS estimates from the phantoms are being shared yet.
  - Andy has started initial analysis of site data.
- Kathy provided an overview of Duke's analysis of how focal depth could affect measurements.
  - Compared electronically focusing at different depths, versus using the same focal configuration and mechanically translating the transducer to have the same focal configuration interrogating different depths.
  - Simulation data was also generated to test for impact of different focusing configurations.
  - As of now, all results point to a depth dependence (< 5%) in the phantom stiffness, not a bias due to focal configuration.
    - Paul raised the question of how different manufacturers take focal depth into account in their measurements.
    - Hua and Liexiang mentioned that phantom measurement have been used in the past; phantom orientation was brought up as a variable.
    - Shigao suggested imaging the phantoms in different orientations, such as from the bottom or the side.
    - Question for CIRS: can we add other imaging windows "easily" to the existing phantoms in a non-destructive way?
- Spectral content of shear waves was reviewer in the context of how that may affect stiffness measurements. Given that everyone has the "same" phantom now, is it worth measuring and characterizing spectral content of the shear waves generated by their respective systems.
- Discussed sharing all of our raw data so that each research site could see if they could reconstruct the same shear wave speeds when starting with the same data.
  - Duke can share ~300 GB of data of raw data from all 22 CIRS phantoms
  - All system parameters associated with the data would be shared
  - Corresponding shear wave simulation data could also be shared

Next steps:

- Participants to send the list of ultrasound machines to be used in the phantom study to the following: (Brian.Garra@fda.hhs.gov; tjhall@wisc.edu; andy.milkowski@siemens.com; jlisiecki@rsna.org)

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Next QIBA US SWS call: Clinical Applications & Biological Targets Subcommittee, 3/18/2013, Monday, 1 pm CT, with Dr. Samir as moderator