Quantitative Nuclear Medicine Imaging

Accelerating development of new therapies and improving assessment of response

**What’s Next: Quantitative PET/CT**
- Biologic markers of cancer progression and response to therapy
- Radiotracer binding to target molecules
- Molecular signatures
- Response to therapy of liver and GI tract
- Imaging of brain development and disorders
- Imaging of bone and musculoskeletal disorders

**Why Quantification: Increase the Utility and Value of Imaging**
- Improve individual patient care
- Clinically proven detection and longitudinal quantification for follow-up
- Advances imaging from diagnostics and staging to therapy assessment

**How to Get to Quantitation: Establish QIBA Profiles**
- QIBA PET/CT Initiatives since 2008
- RSNA Sponsored, Volunteer based, NIBIB funded

NM Modality Coordination Committee

**QIBA Profiles: Guidance for All Aspects of Quantitation**

**QIBA ENHANCED for ACQUISITION DATA to INFORM PROFILES**

**PROTOCOL CREATION PROCESS of VENDOR and SOFTWARE MANUFACTURERS**

**Clinical Center**
- Patient care
- Outcomes

**GMP QUALITY**
- Standards
- Compliance

**QA VALIDATION**
- Testing
- Validation

**π Profiling**
- Patient care
- Outcomes

**QIBA PET/CT TC Projects: Completed**

- FDG-PET/CT Profile Field Test
- QIBA FDG-PET/CT Digital Reference Object Project (Part I)
- Analysis of SARC 11 Trial PET Data by PERCIST with Linkage to Clinical Outcomes
- Personnel Support for FDG-PET Profile Completion
- Evaluation of the Variability in Determination of Quantitative PET Parameters of Treatment Response Across Performance Sites and Readers
- Exploring a SPECT Profile Writing Group
- Implementation of Profiles (by QIBA and vendors)
- Clinical use of Profiles

**QIBA PET/CT TC Projects: In Progress**

- FDG-PET/CT Publicly Reviewed Profile
- Uniform Protocol for Imaging in Clinical Trials (UPICT) for FDG-PET/CT: Publicly Comment phase
- Amyloid PET Neuroimaging Profile
- QIBA PET/CT TC Projects: In Progress
- Exploring a SPECT Profile Writing Group
- Profile testing
- Implementation of Profiles (by QIBA and vendors)
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**RSNA 2014**

**What We’ve Done and How You Can Participate**
- Collection of recommendations for quantitative PET
- Presentation of recommendations to FDA
- NIBIB grant applications
- Year 2 research project funding progress
- FDG-PET/CT Profile published and publicly reviewed
- Collaboration with UPICT on Protocols
- Amyloid Writing Group established
- Year 3 research project application submitted
- PET Profile Writing Group working on
- Exploring a SPECT Profile Writing Group
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**Organization Standing Activities**
- QIBA Monthly Steering Committee meeting
- Bi-weekly Profile telephone conferences
- QIBA meetings and teleconferences
- Profile testing
- Implementation of Profiles (by QIBA and vendors)
- Clinical use of Profiles

**Notes**
- International member participation
- Volunteer based
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