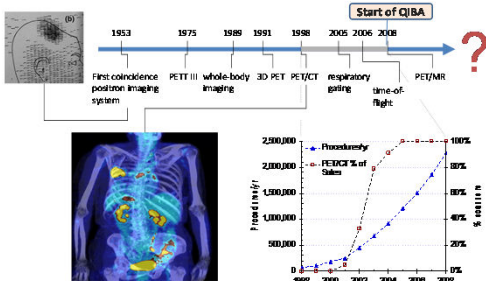


Quantitative Nuclear Medicine Imaging

Accelerating development of new therapies and improving assessment of response

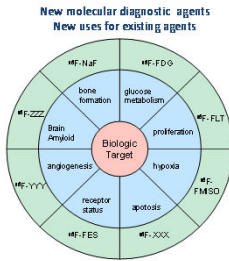


PET/CT: A Proud History of Innovation

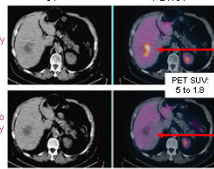


What's Next: Quantitative PET /CT

- Biomarkers To Quantify Hallmarks of Cancer
- Characterize Hallmarks of Disease and Response to Therapy



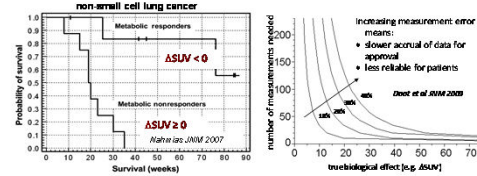
Response to therapy of liver met GST



Carril and Cook, British J Cancer 2009

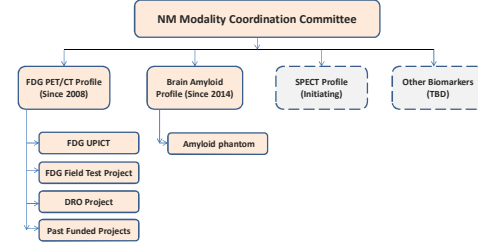
Why Quantification: Increase the Utility and Value of Imaging

- Improve individual patient care
- Accelerate adoption of new molecular diagnostics
- Clinically proven detection and longitudinal quantitation for follow-up
- Make clinical trials of new therapies more effective
- Moves imaging from diagnostics and staging to therapy assessment
- All tied to quantitative accuracy

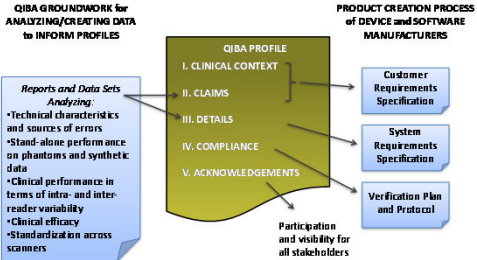


How to Get to Quantitation: Establish QIBA Profiles

- QIBA PET/CT Initiatives since 2008
- RSNA Sponsored, Volunteer based, NIBIB funded



QIBA Profile: Guidance for All Aspects of Quantitation



What We've Done and How You Can Participate

Specific accomplishments and plan

- ✓ Collection of recommendations for quantitative PET
- ✓ Presentation (joint with FNHI) to FDA
- ✓ NIBIB grant applications
- ✓ Year 1 & 2 research projects accomplished
- ✓ Year 3 research project funding- progress
- ✓ FDG-PET/CT Profile published and publically reviewed
- ✓ Collaboration with UPICT on Protocols
- ✓ Amyloid Writing Group established
- ✓ Year 4 research application – submitted
- ✓ PET Amyloid Profile Writing Group working for 1 yr and became an Affiliate of GAAIN
- Exploring a SPECT Profile Writing Group
- Profile testing
- Implementation of Profiles
- Clinical use of Profile

Organization Standing Activities

- QIBA Monthly Steering Committee meeting
- Bi-weekly Profile telephone conferences (Alternative days for FDG profile and Amyloid profile writing group)
- Annual QIBA meetings and updates at RSNA
- Working visits with vendors
- Needed based task force meetings
- Profile testing
- Implementation of Profiles (by QIBA and vendors)
- Clinical use of Profiles
- [More information at rsna.org/QIBA](http://rsna.org/QIBA)

QIBA PET/CT TC Projects: Completed

Title	PI
Meta-analysis to analyze the robustness of FDG SUV changes as a response marker, post and during systemic and multimodality therapy, for various types of solid intracranial tumors.	O. Hoekstra, U of the Netherlands
QIBA FDG-PET/CT Digital Reference Object Project (Part I)	P. Kinahan, U of Washington
Analysis of SARC 11 Trial PET Data by PERCIST with Linkage to Clinical Outcomes	R. Wahl, Johns Hopkins U
Personnel Support for FDG-PET Profile Completion	E. Perleman, PAG P. Kinahan, U of Washington
Evaluation of the Variability in Determination of Quantitative PET Parameters of Treatment Response Across Performance Sites and Readers	R. Wahl, Johns Hopkins U
Evaluation of FDG-PET SUV Covariates, Metrics and Response Criteria	J. Yip, Dana Farber CI
Integration of Retrospective Review of 2-3 Groupings of Clinical Trial Datasets (This includes the current Hoekstra proposal) Will utilize the PERCIST analysis	O. Hoekstra, U of the Netherlands
FDG-PET/CT Publically Reviewed Profile	QIBA FDG PET/CT Quantitative Committee
Uniform Protocol for Imaging in Clinical Trials (UPICT) for FDG-PET/CT: Public Comment phase - Done	J. Yip, University of Utah

QIBA PET/CT TC Projects: In Progress

Title	PI
FDG-PET/CT Profile Field Test	T. Turkington, Duke University R. Boellaard, U of the Netherlands M. Lodge, Johns Hopkins University
QIBA FDG-PET/CT Digital Reference Object Project Extensions (Part II)	P. Kinahan, University of Washington
Amyloid PET Neuroimaging Profile	A. Smith, Siemens E. Perleman, PAG S. Minoshima, U of Utah

Current QIBA members from*

- Academic institutes
 - Clinics
 - Pharma companies
 - Device companies
 - CROs
 - FDA
 - NIST
- * Note:
• International member participation
• Volunteer based

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