QIBA CT Volumetry Biomarker Committee Update
Thursday, May 6, 2015

QIBA CTV-1: Meeting Notes

Participants 19 in-person, 1 telephone

1. Edits post-RSNA formally presented and nearing consensus
2. Scope to include tumors and nodes
3. Major processes have been agreed upon
4. Current claim numbers are speculative – need data to refine
Issue 1: Image Data Reconstruction

Specification of “shalls” for spatial resolution and image noise

– Agreement: older methods used for FBP inadequate to capture nuances
– Evolving state-of-the-art metrics for iterative reconstruction
– Small subgroup to reach consensus on best practice in near term

Issue 2: Likely Impact of Profile Compliant Variations

Table 1: Expected Precision for Alternate Scenarios (Informative)

<table>
<thead>
<tr>
<th></th>
<th>Different Acquisition Device</th>
<th>Same Acquisition Device</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Different Radiologist</td>
<td>Same Radiologist</td>
</tr>
<tr>
<td></td>
<td>-29% to +29%</td>
<td>-28% to +28%</td>
</tr>
<tr>
<td></td>
<td>-3% to +3%</td>
<td>-2% to +2%</td>
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<tr>
<td></td>
<td>47%</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td>83%</td>
<td>80%</td>
</tr>
</tbody>
</table>

Notes:
1. Precision is expressed here as 2.77 times the total deviation index.
2. A measured change in tumor volume that exceeds the relevant precision value in the table indicates 95% confidence in the presence of a true change.
3. A 95% confidence interval for the magnitude of the true change is given by ± the relevant precision value

Row 1: guesstimate based on earlier data -- rate of 1A, 1B, 1C but not TDI
Row 2: TI -- point estimates, without uncertainty
Row 3: most pessimistic assumptions… lower bound of the confidence interval TDI
CT Volumetry Committee

Current claim numbers are speculative
No alternate sources of test, retest identified

Field test necessary next step – with goals
• Valid measurements of variability
• From profile compliant process
• Dissect out components

CT Volumetry Field Test

• Prove feasibility of profile compliant process
• Define precision and component contributions
• Expand clinical data beyond lung
• Data for public use in technology development
• Sequestered data for conformance testing