Imaging diagnostico in Sanità
Stato attuale e prospettive

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Philips CT
Pisa 20-12-2016

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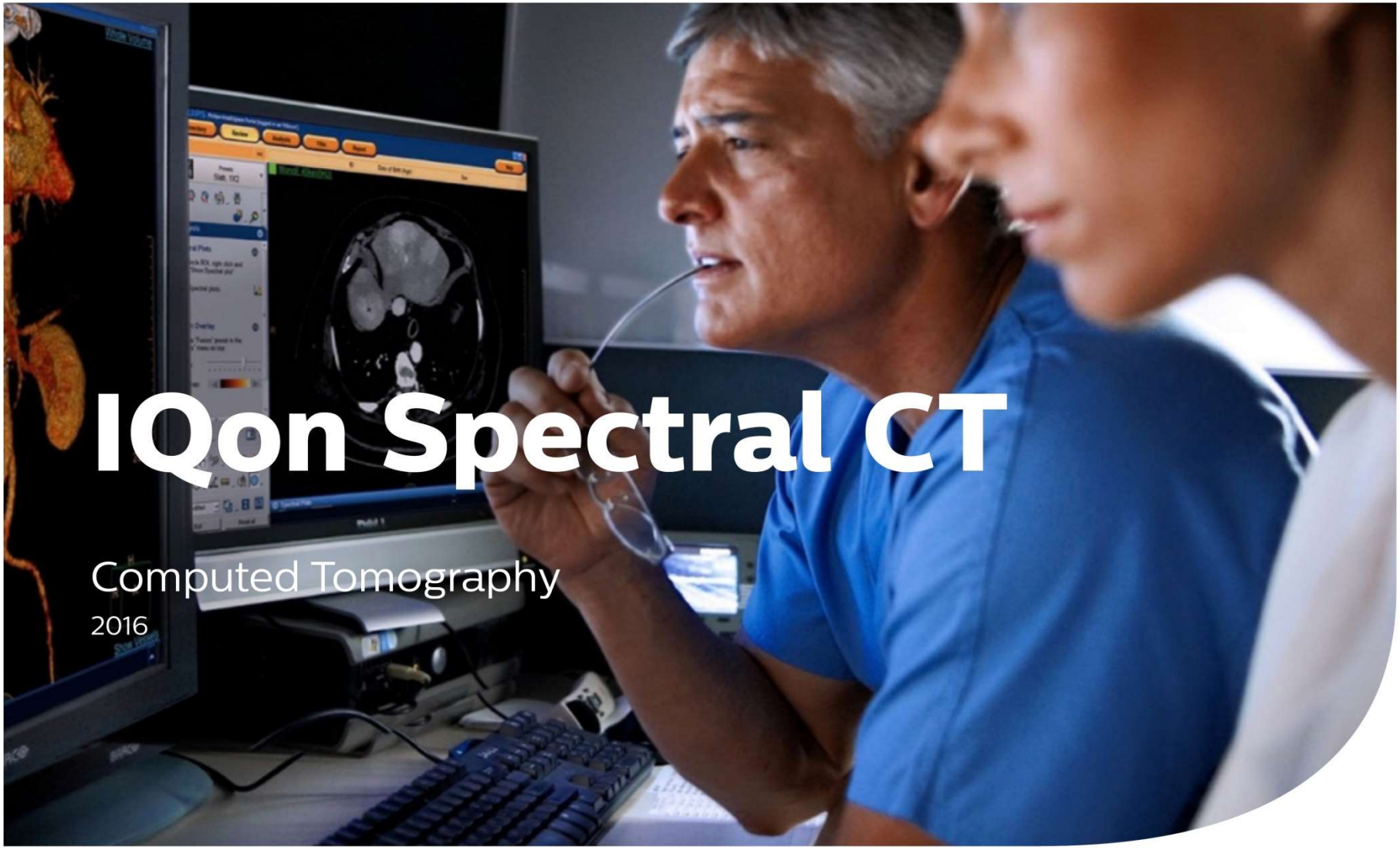

IQon Spectral CT

Computed Tomography

2016

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An elderly patient with a history of aortic valve stenosis and renal insufficiency was referred for a pre-TAVI procedural evaluation. Because of his challenging condition, he could only tolerate 20 cc of injected contrast, which in a conventional CT yields poor visualization.

Even with 20 cc of injected contrast, Spectral Advanced Vessel Analysis enabled measurement and visualization of the iliac artery for planning and access to the aortic valve.

Benefit: IQon Spectral CT provides the ability to create angiograms from routine or low injected contrast volume studies.

Images courtesy of University Hospitals Case Medical Center

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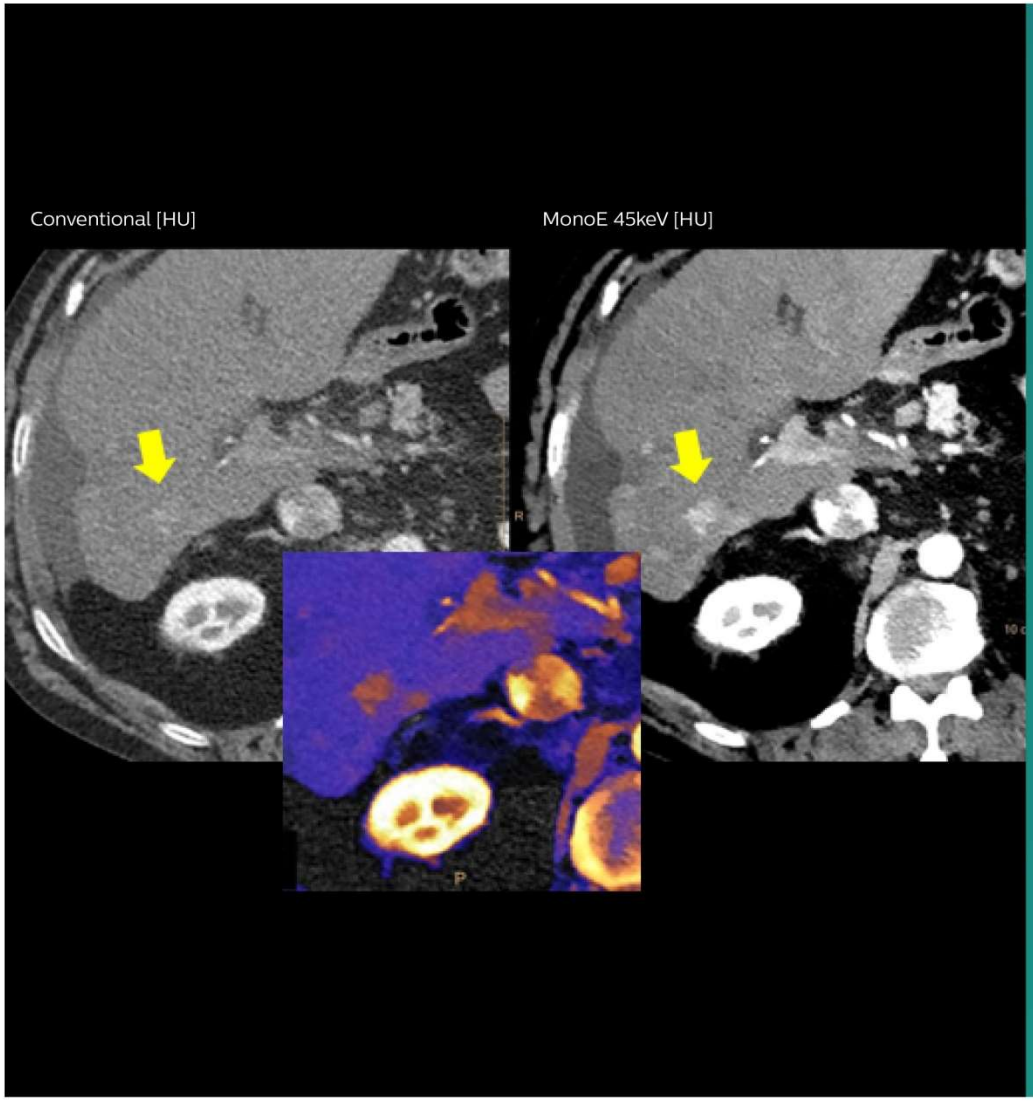

The patient underwent ablation to treat hepatic lesions and returned for a follow-up to determine ablation effectiveness.

The Philips IQon Spectral CT was able to take a conventional CT and lower the MonoE to provide layers of spectral results in one scan. This allowed visualization of iodine uptake, adding another layer of information.

Benefit: Delivers valuable clinical insights such as tissue characterization and visualization for confident disease management. And because spectral information is always on, additional data is available whenever a deeper analysis is needed.

Images courtesy of University of Texas Southwestern Medical Center

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Kidney incidental finding

In the conventional CT image, the lesion appears to be a cyst. Because spectral data is always on with the IQon Spectral CT, a deeper look utilizing the layers of spectral data allowed for a more in-depth analysis and evaluation of possible malignancy of the lesion.

Benefit: Tissue characterization and visualization for confident disease management.

Images courtesy of University of Texas Southwestern Medical Center

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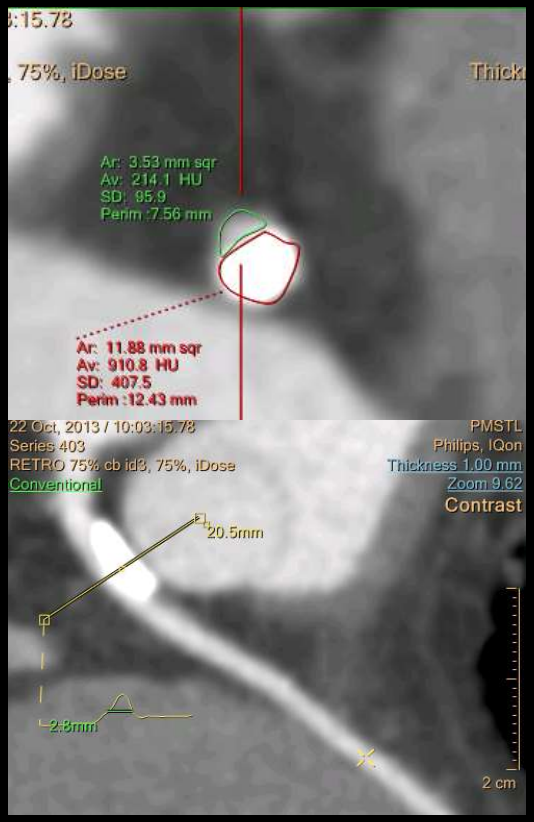
IQon Spectral CT: stenosis evaluation



Scansione
convenzionale 120 kVp

L’analisi delle alte energie consente una misura precisa della placca coronarica e quindi della stenosi

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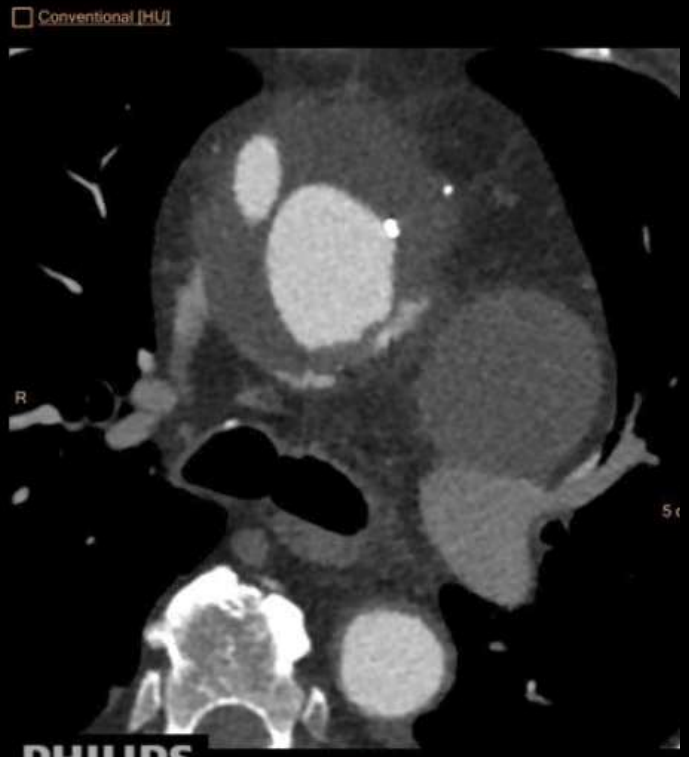
IQon Spectral CT: Thoracic aorta aneurysm repair



Conventional

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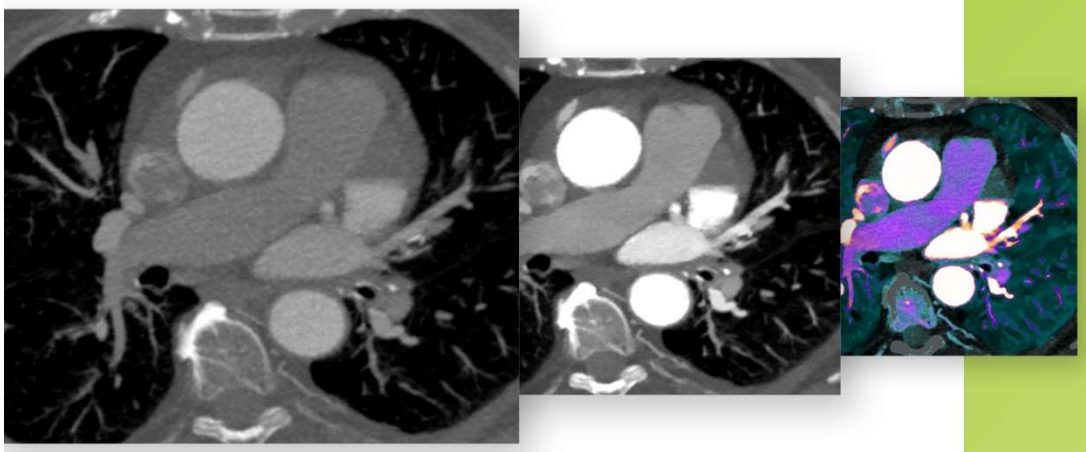
Diagnostic layers of spectral data 100% of the time, in a single scan.



Conventional CT vs. IQon Spectral CT

- Conventional CT Result

- Conventional CT Result

Because spectral is always on, you also get:

- Monochromatic Imaging
- Lesion Characterization
- Material Decomposition
- Material Decomposition (Color Display)

Model-Based Iterative Reconstruction

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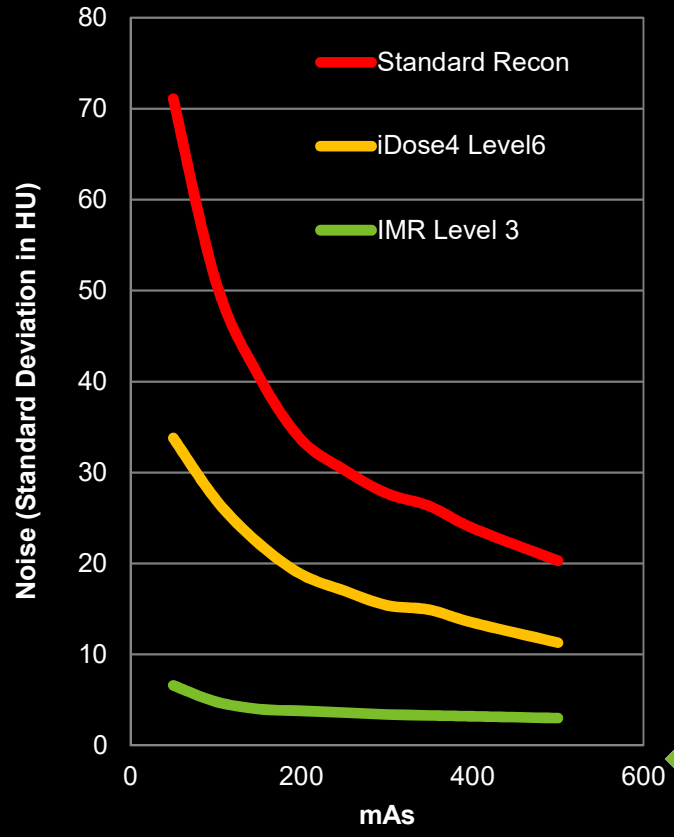
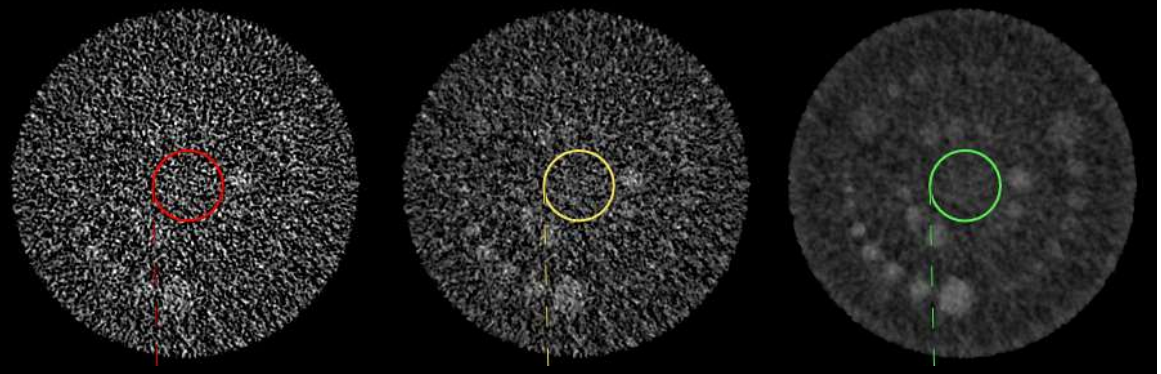
Virtually noise-free

Characteristic of a true knowledge-based IR

73 - 90% Noise Reduction*



1 mm Slice Thickness, 10 mGy $CTDI_{vol}$



SD: 15.4

Standard Reconstruction

SD: 8.7

iDose^4 Level 6

SD: 1.9

IMR

True model/knowledge-based IR

Virtually noise-free

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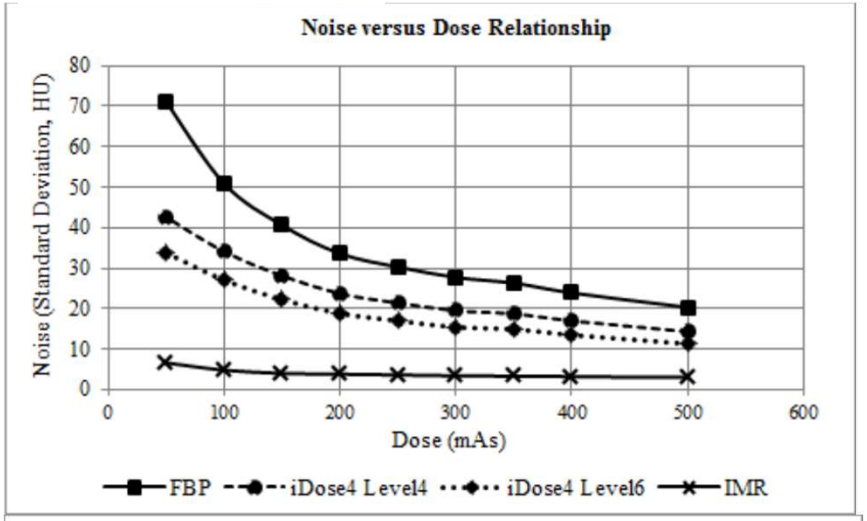

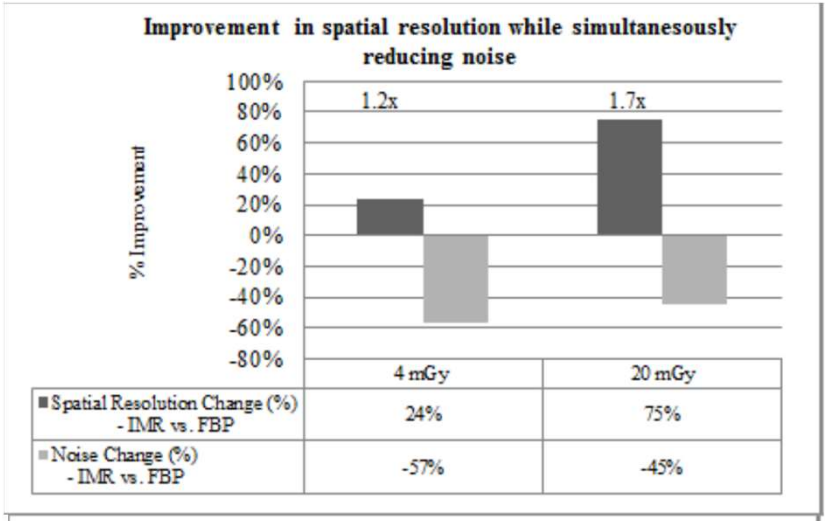

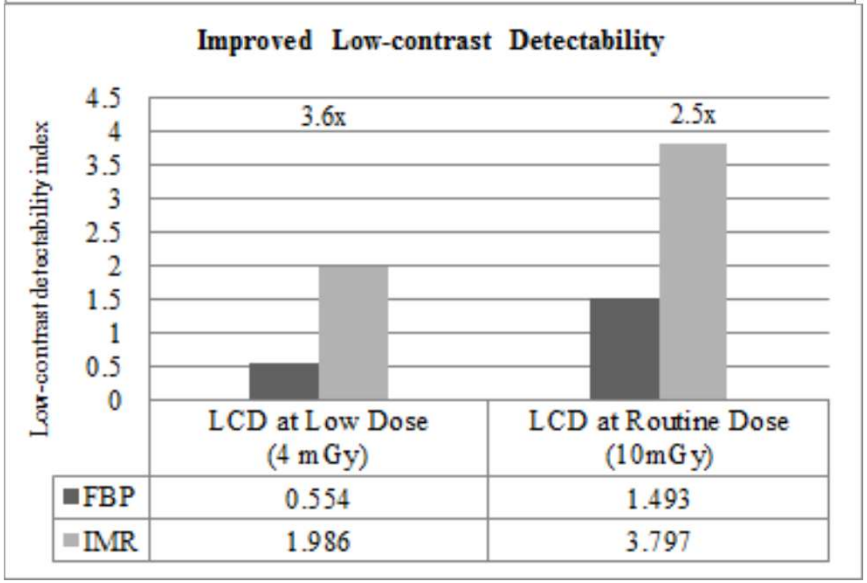

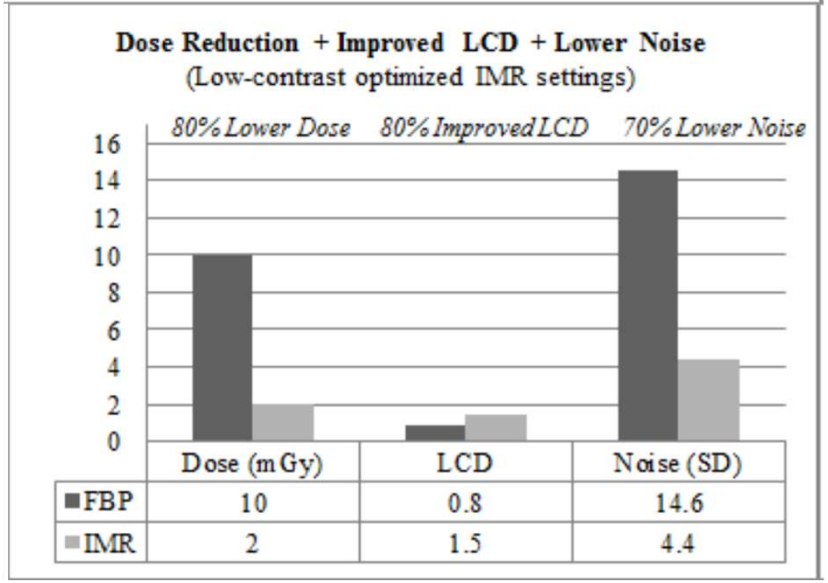

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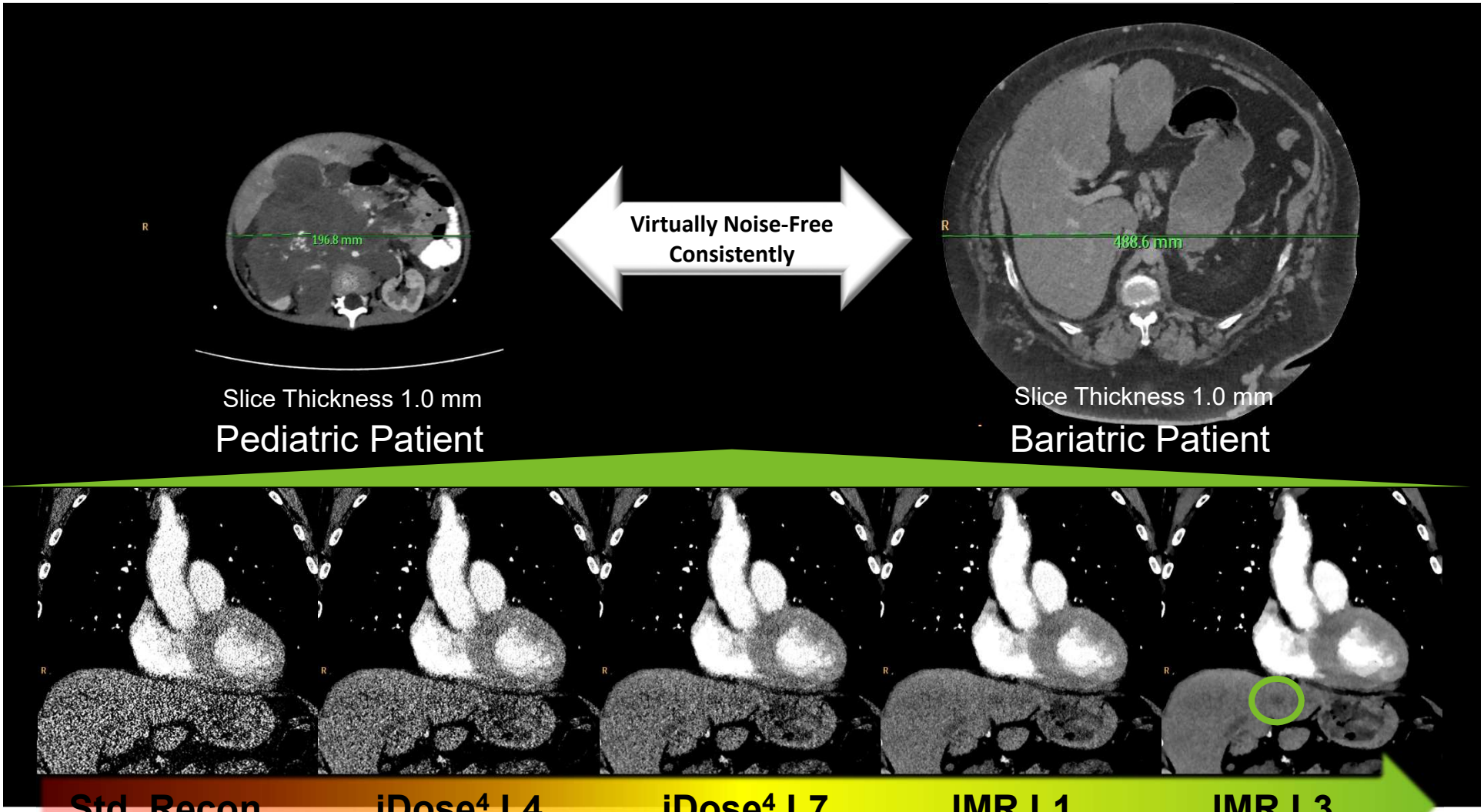
IMR Workflow powered by iPatient

Simplify adoption & achieve consistency



Virtually noise-free

Characteristic of a true knowledge-based Iterative Reconstruction

73 - 90% noise reduction*

0.9 mSv IMR Cardiac

Standard Reconstruction

iDose (algoritmo iterative non model-based)

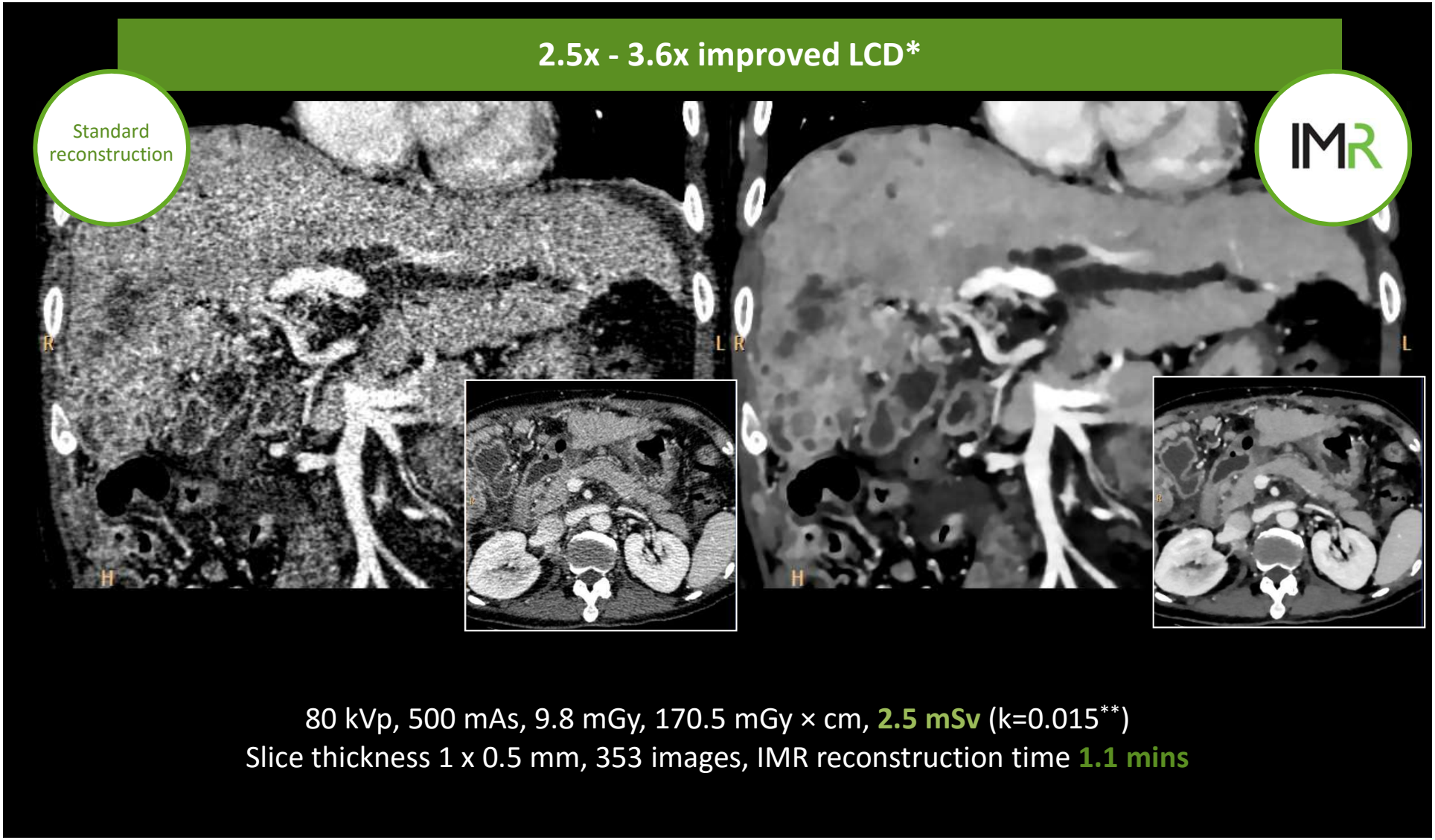
IMR

PHILIPS

Improve low-contrast detectability

Detect small and subtle differences

2.5x - 3.6x improved LCD*



80 kVp, 500 mAs, 9.8 mGy, 170.5 mGy × cm, **2.5 mSv** (k=0.015**)
Slice thickness 1 x 0.5 mm, 353 images, IMR reconstruction time **1.1 mins**

Courtesy: GD General Hospital, China

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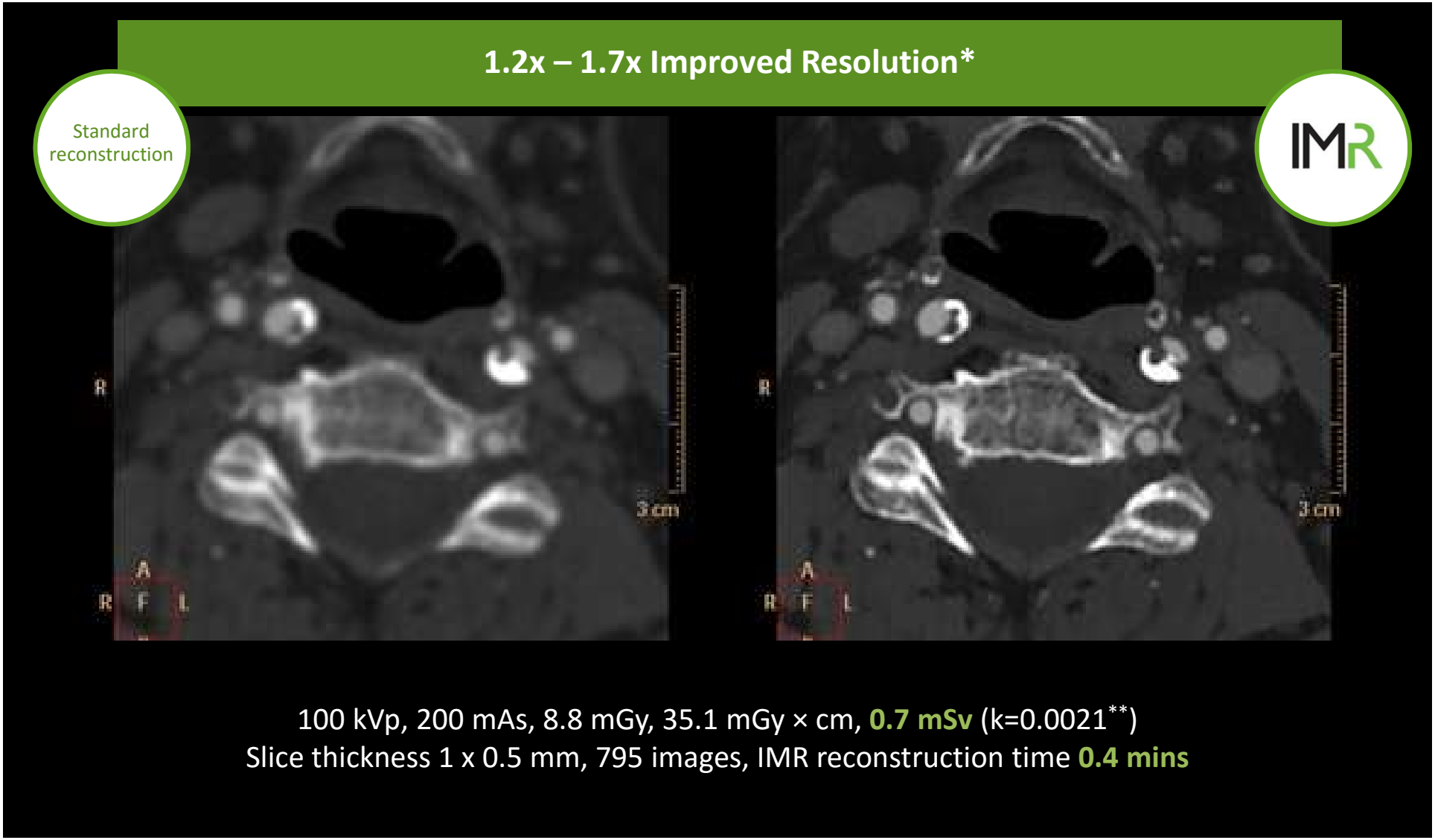
** Low-contrast detectability was assessed using Reference Body Protocol on the MITA IQ phantom, using human observers. Data on file.*
*** AAPM Technical Report 96*

Improve high-contrast resolution

Visualize small structural detail

1.2x – 1.7x Improved Resolution*



100 kVp, 200 mAs, 8.8 mGy, 35.1 mGy × cm, **0.7 mSv** (k=0.0021**)
Slice thickness 1 x 0.5 mm, 795 images, IMR reconstruction time **0.4 mins**

Courtesy: UCL, Belgium

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** High-contrast spatial resolution and image noise were assessed using Reference Body Protocol on a phantom. Data on file.*
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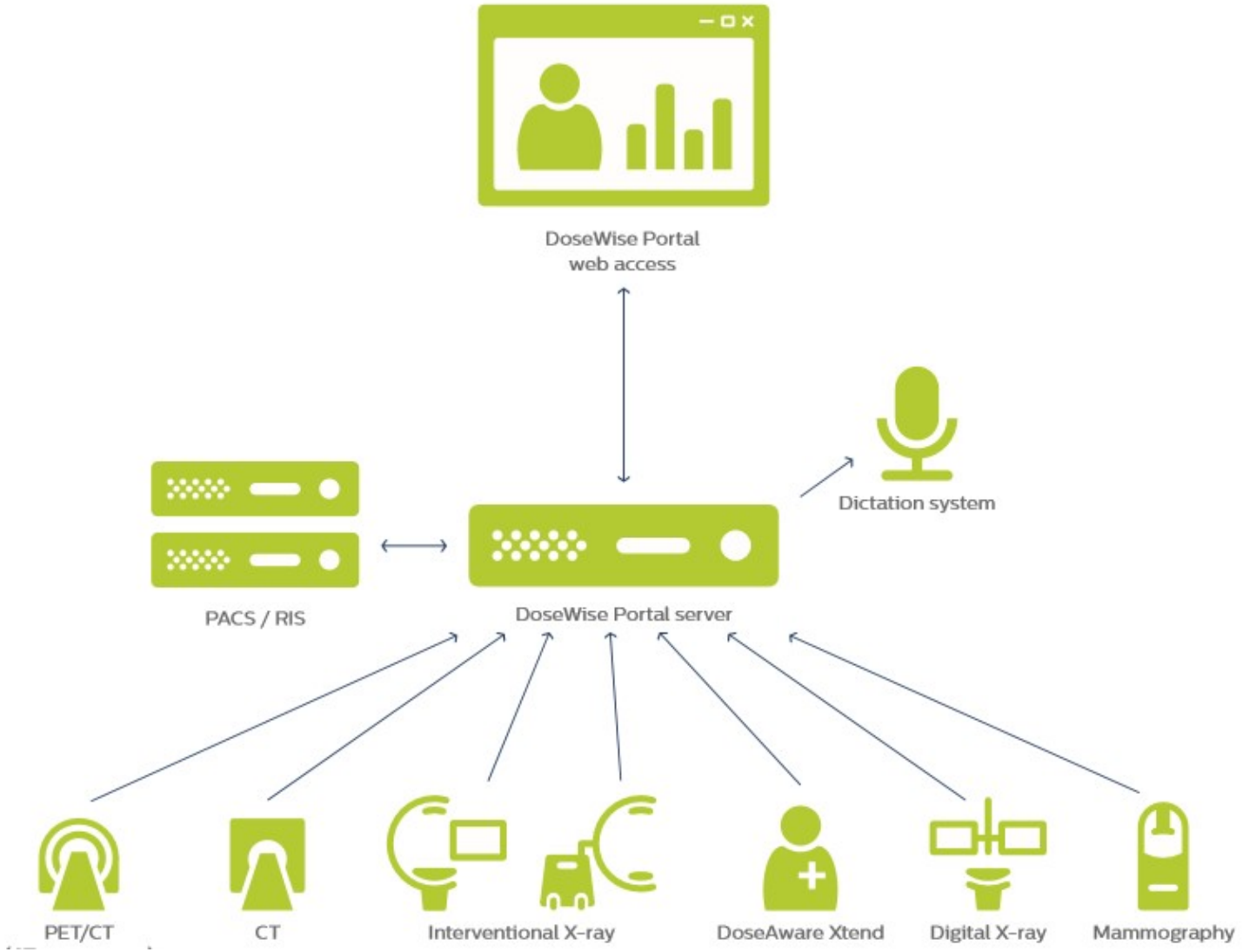
DoseWise Portal

Take control of dose management

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