# User Experiences of Spectral CT – RVH Belfast

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# Introduction

CT Radiographer RVH – 2016-2019

Cardiac Cath labs RVH – 2014-2016

Rotational (CT+X-ray) Sheffield NGH – 2010-2014

Trained in Birmingham -2007-2010

- Strong interest in CT
- Experienced many Systems
- (4 slice -320, GE, Toshiba, Philips, Siemens)

# Presentation Aims

- Outline Workload of Belfast RVH Hospital
- Outline the need for a spectral scanner
- Explain how Philips Spectral differs from others
- Highlight the functionality of Spectral CT
- Demonstrate advantages of Spectral Acquisition
- Explain how Spectral has changed working Practices

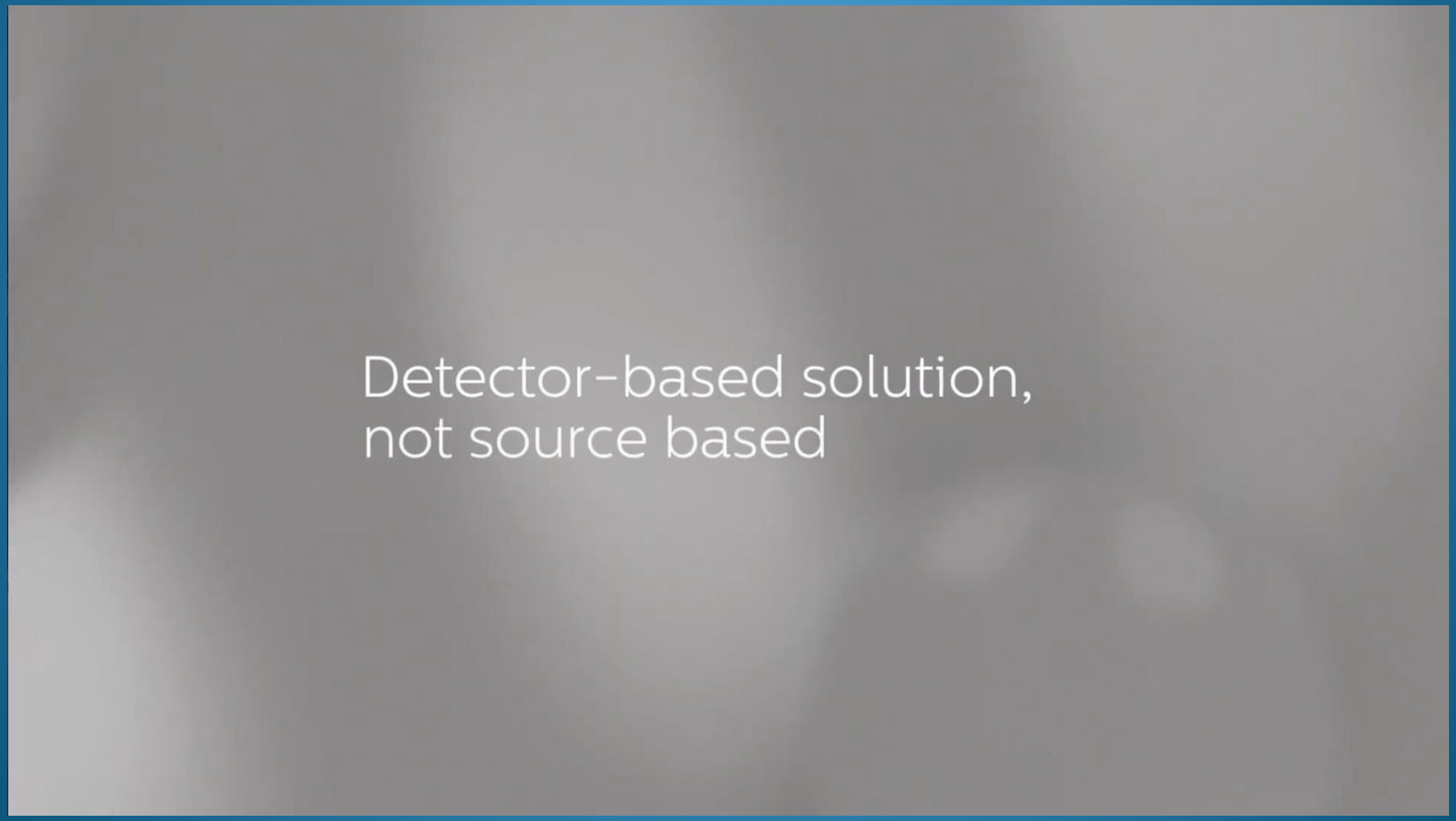
# Belfast RVH

- One of four linked Hospitals comprising the Belfast HSC trust
- Regional Trauma Centre for Northern Ireland
- Tertiary Referral Centre
- Stroke thrombectomy centre & Regional PCI Centre
- Philips Managed Equipment Service (MES) site

# CT Dept – Pre IQon

- 3 Phillips CT scanners on 7 year lease:
  - 2x Philips Ingenuity 64 Slice
  - 1x Philips Brilliance iCT 128 Slice – Due to be replaced
    - Cardiac Scanning, fast rotation time
- New scanner needed to be:
  - Suitable for Cardiac
  - Future proof
  - Reduced Dose
  - Full Iterative Model Reconstruction

# Why Philips Spectral?



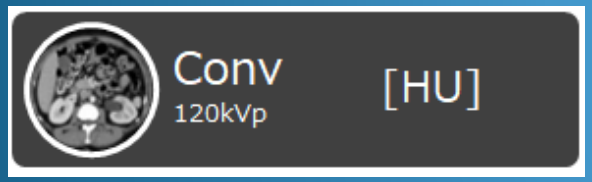
# Why Philips IQon?

- Fully retrospective – 0.67mm 128 slice, Dual Detector based spectral
- Single tube design – Fast Full rotation time 0.27s
- No reduction in FOV
- True Iterative Model Reconstructions
- Cardiac CT

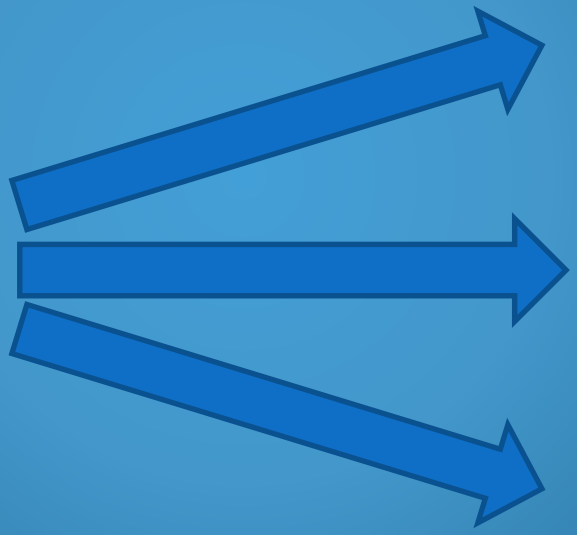
# Conventional CT Pitfalls

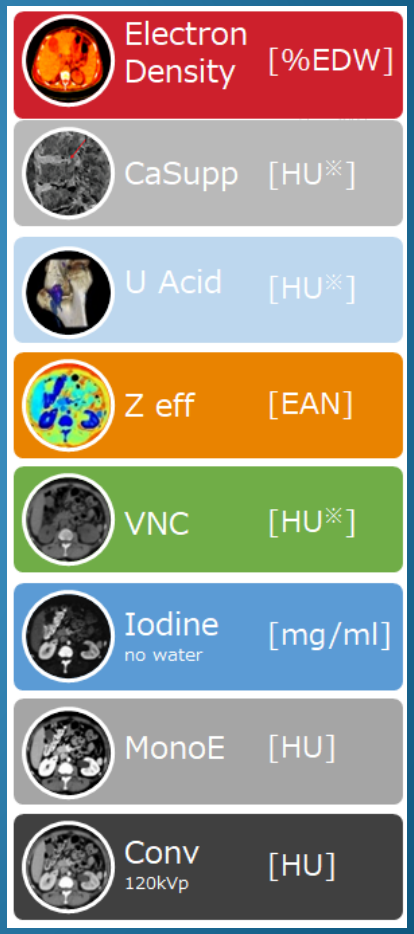
- Poor CTA Quality/Poor IV Access
- Patients with Low eGFR requiring contrast
- Metal Artefact Reduction
- Contrast/Blood differentiation (thrombectomy pts)
- Beam Hardening on CT Brains
- Radiation Dose

# The Spectral Advantage



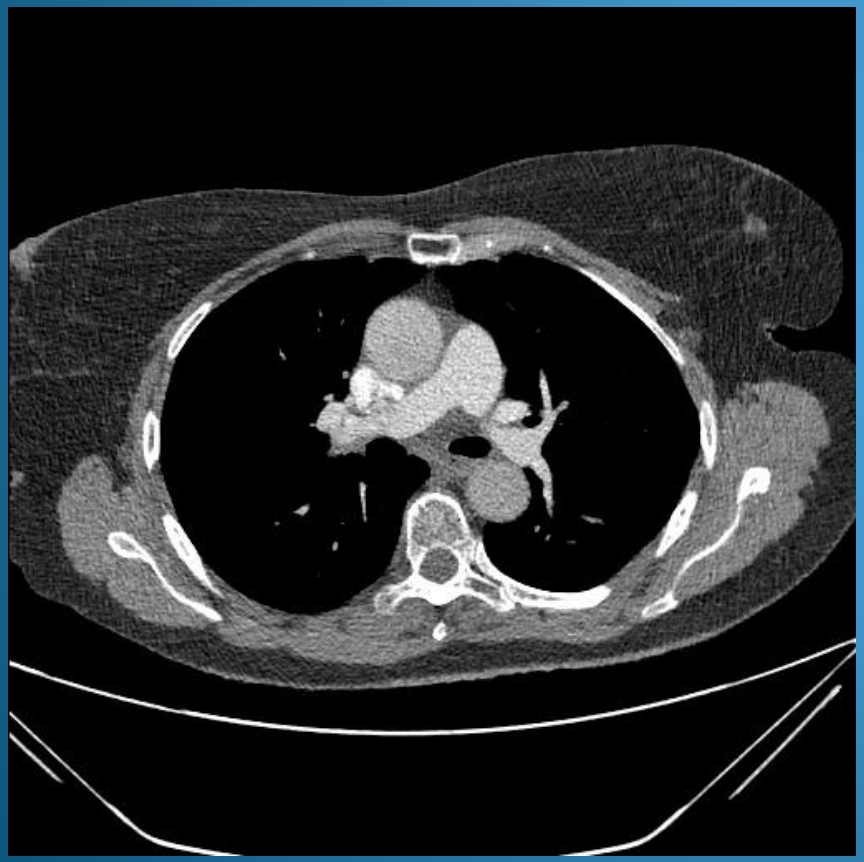

Conventional CT

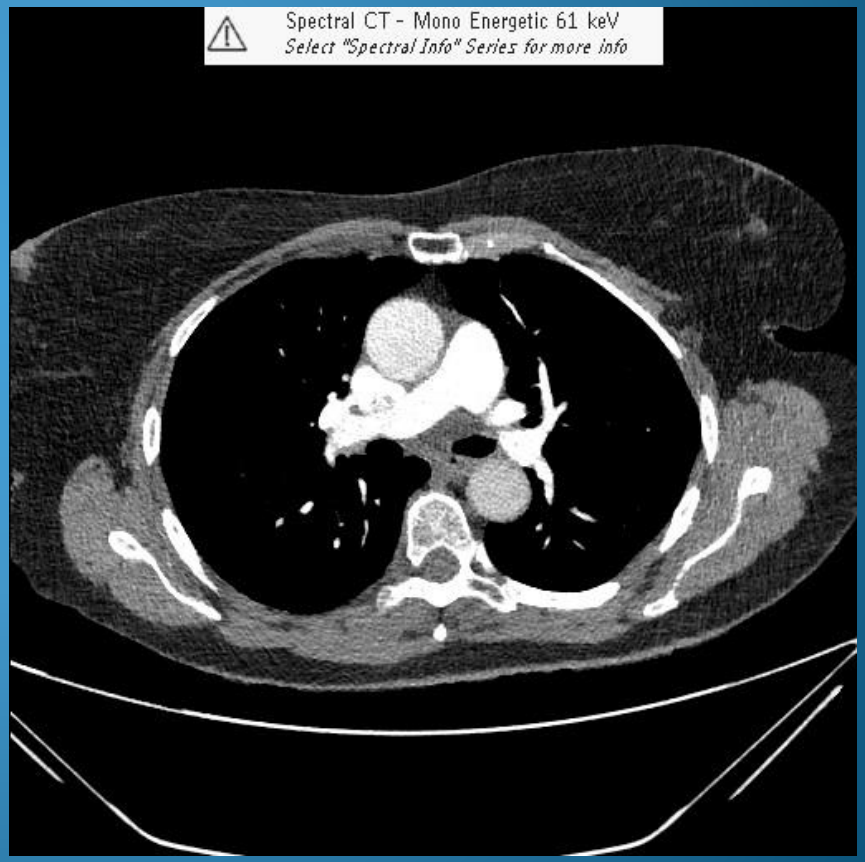





IQon Spectral CT

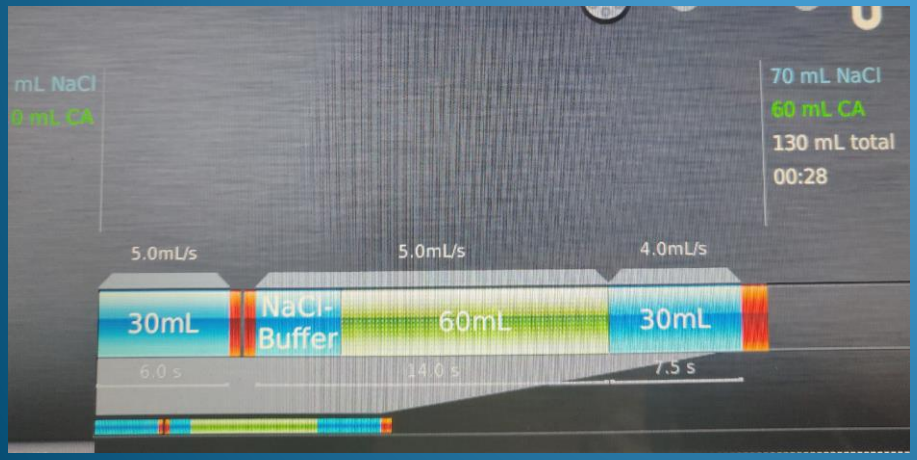
# Poor Quality CTA – Mono E



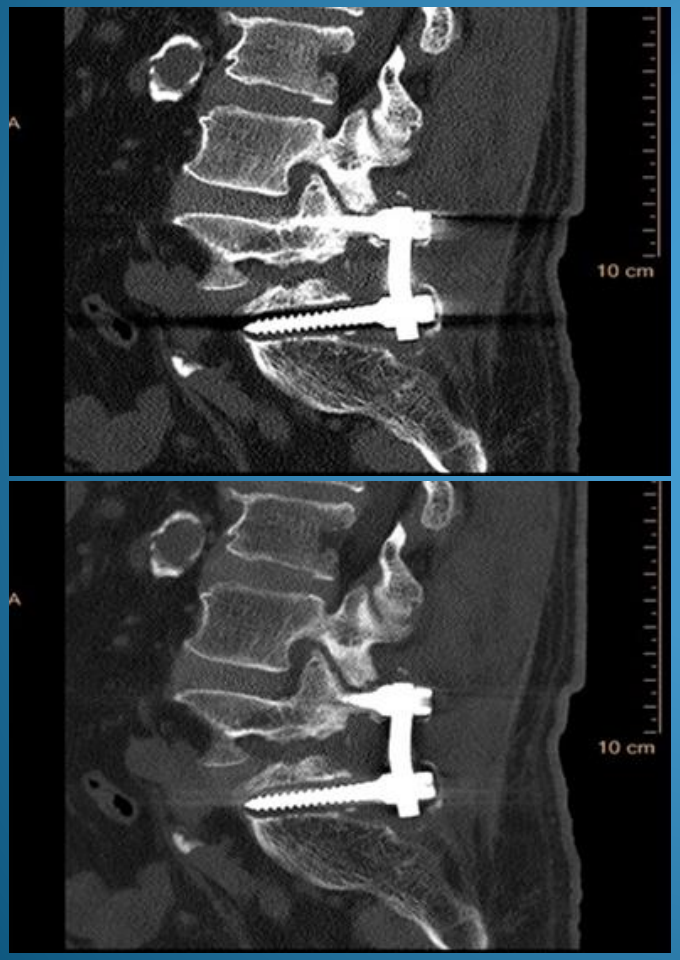


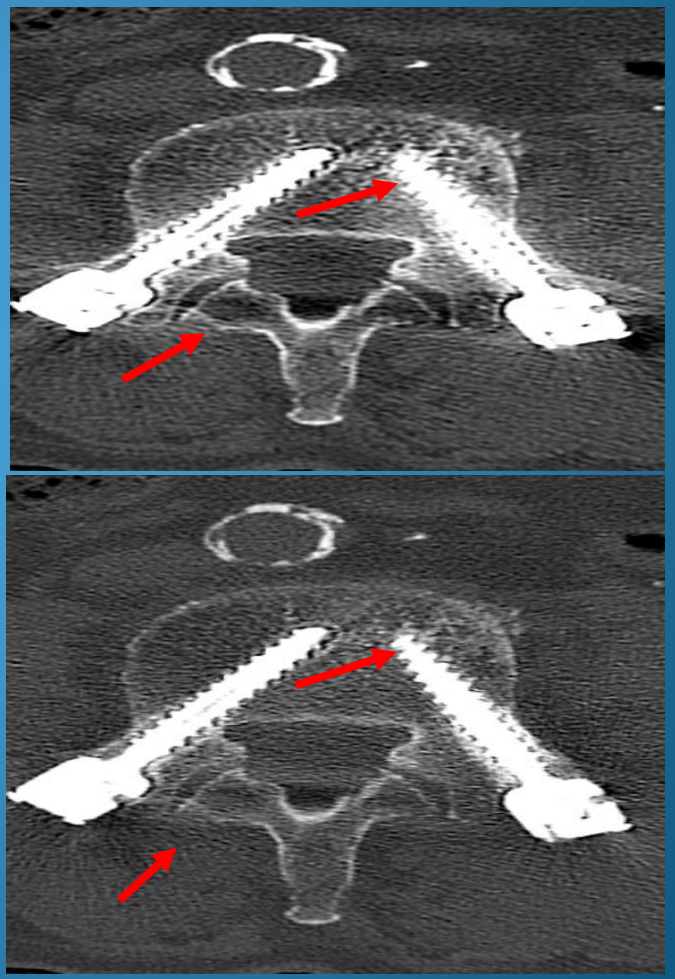
# Poor eGFR/IV Access

- Conventional CTPA
  - 5mls/sec essential
  - High Vol of Contrast
  - No ‘Safety Net’
- Spectral CTPA
  - 5mls/sec not required
  - Reduced Contrast Vol
  - Mono-E Safety Net




# Metal Artefact Reduction

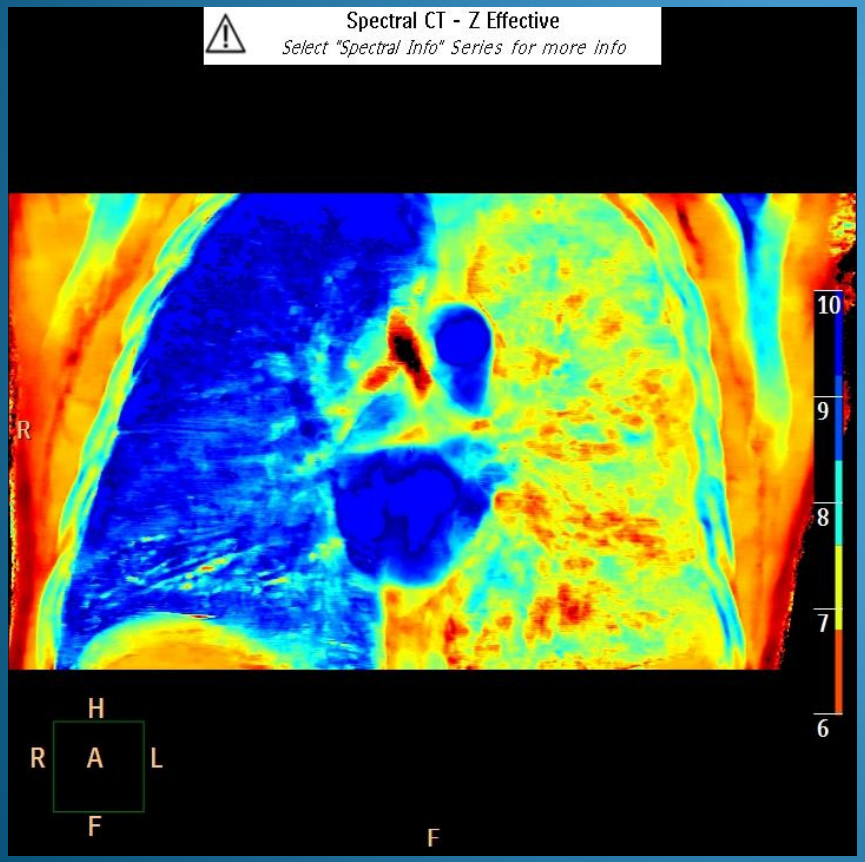


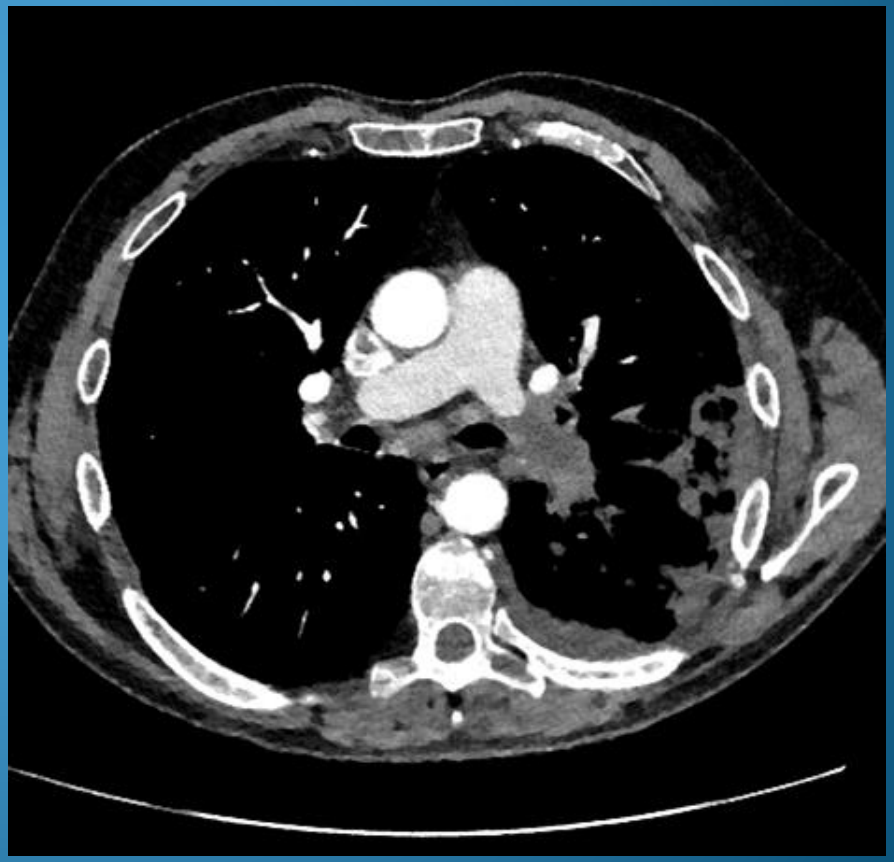



# Blood/Contrast Differentiation

# Classification of Renal Stones (Uric Acid Removal)

# Z-Effective/Iodine Perfusion



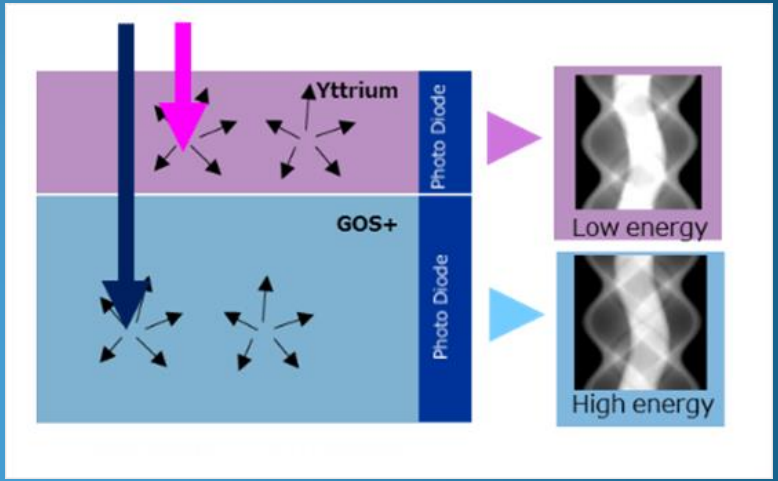



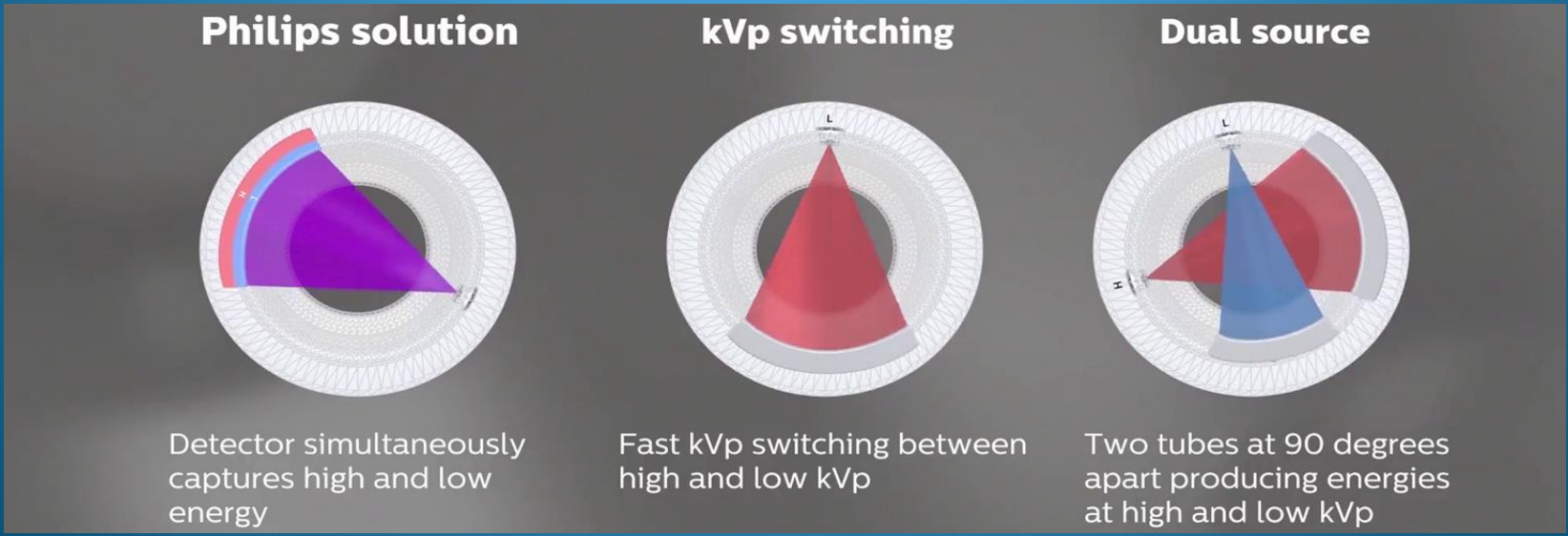
# Changes In Practice

- Reduced Contrast Vol
- Removal of Uncertainty/ addition of ‘Safety Net’
- Reduced Scan overlap
- Fully Retrospective ‘Always on’ Spectral
- Additional information from same or lower dose

# Conclusion

- Philips Spectral only dual detector based system
- No Compromise in FOV
- ‘Always on’



# Questions?