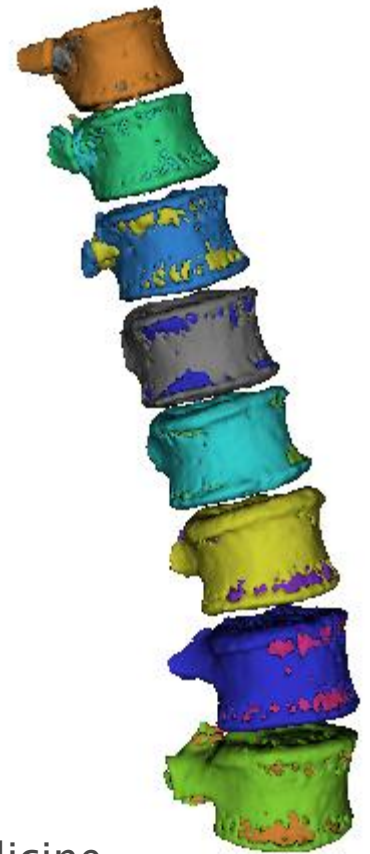


Spine Segmentation & Osteoporosis Screening in CT



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Screening for Osteoporosis in CT Scans

- ▶ *Osteoporosis* – A condition of decreased bone mass leading to fractures
- ▶ *Common*
 - 1.5 million vertebral fractures per year (US)
 - 180 thousand patients placed in nursing homes per year (US)
- ▶ *Devastating & Costly*
 - immobility, pain, mortality
 - 18 billion dollar per year (US)
- ▶ *Preventable & Treatable*
 - diet, exercise
 - quit smoking & excess drinking
 - medication, fall prevention, etc...
- ▶ *Under Diagnosed*
 - DXA screening has low compliance rate
 - Frequently missed in CT

Our Solution

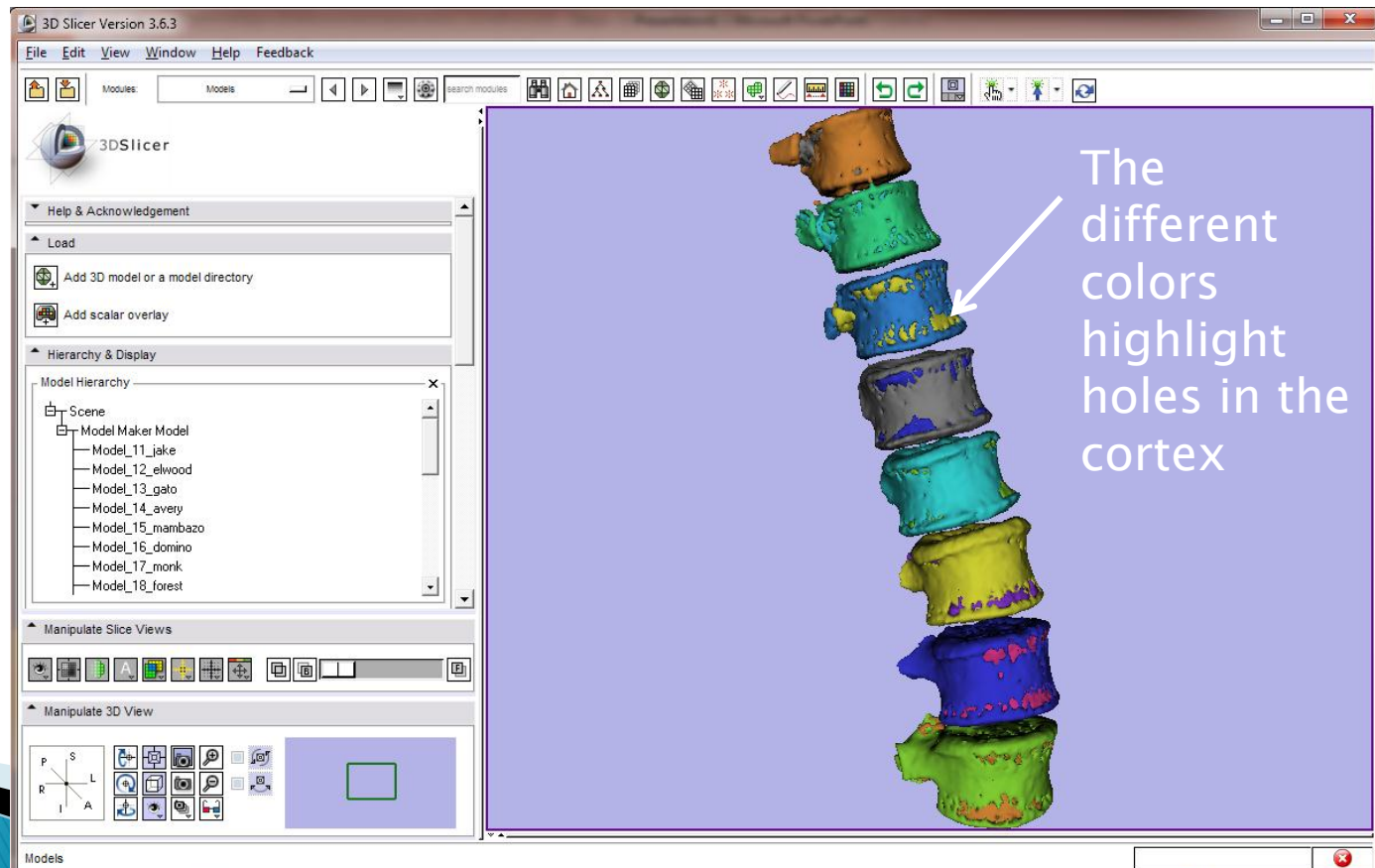
Automated screening for findings of osteoporosis in CT scans performed for other clinical reasons

*Vertebral fractures
Low bone density
Etc.*



Milestone 1 – Spine Segmentation

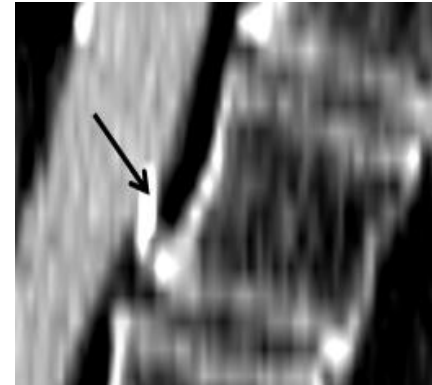
- ▶ NA–MIC Spine Segmentation Challenge + full automation
- ▶ Slicer integration
 - Basic integration complete
 - Atlas integration in the works



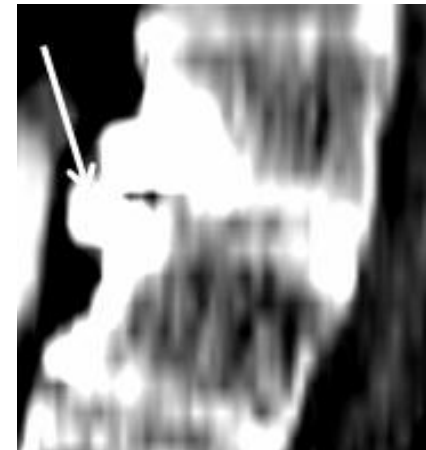
Not a Silver Bullet (yet)

- ▶ Abdomen CT only
- ▶ Platform support: windows
- ▶ No mapping to formal vertebrae labels
- ▶ Known issues
 - Calcifications
 - Contrast

Need to
Remove
calcification
in the aorta



But keep
osteophytes



▶ Thank you