Application of IRIS™ 3D anatomical model for preoperative surgical planning in the management of renal masses


University of Rochester Medical Center, NY
Select 2D CT Scans

De-Identify CT to remove PHI

Upload de-identified CT to Box Folder

Load study CT to IRIS Study PACS

Order 3D models with IRIS App

Create IRIS segmented 3D models

Deliver 3D models to IRIS Study account

Consolidate Data Collection Forms

URMC

Intuitive

231 reviews were analyzed.

In 99% of the reviews, surgeons rated that the IRIS 3D model accurately represented the anatomical details of all kidney components.

In 64% of the reviews, surgeons rated that IRIS helped achieve a better spatial orientation of the anatomy compared to the 2D CT.
  o The rating was consistent among both low RENAL score (4-7) and high RENAL score (8-12) cases.
**RESULTS**

IRIS 3D model **impacted the planned procedure** in 20% of the reviews
- 3.5% changed decision from PN to RN
- 16.5% changed decision from RN to PN

When decisions were consistent (80%), **surgeons’ confidence** in completing the planned procedure
- increased from 78% with the 2D CT to 87% with the IRIS 3D model (*p*=0.02)
- more pronounced in cases with a high RENAL score (*p*=0.009)

**CONCLUSIONS**

- **Greater consensus** on the planned procedure was observed between the fellow and senior surgeons when the IRIS 3D model was used (48.3% agreement with CT alone and 84% with IRIS). (*p*=0.003)

- IRIS™ 3D models:
  - Better **spatial orientation** of patient’s anatomy
  - Increased **surgeons’ confidence** in decisions
  - Reduced **variation** in preoperative planning
  - Implications for **training**