

Building Treatment Planning Knowledge Base In RT



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- License Agreement: Varian Medical Systems
- Speaker Agreement: Varian Medical Systems

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Building Planning Knowledge Base for RT

- Goal:
 - Model Best Treatment Option(s) for A Patient Based on His/Her Unique Anatomy, Medical Condition and Consensus Data
- Target and OAR delineation
- Dose prescription/fractionation
- Treatment plan/parameter design
- Treatment plan evaluation/selection
- Outcome and plan dosimetry

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Building Planning Knowledge Base for RT

- Planning Knowledge Sources
 - Past data
 - Plans, quality assessment, patient anatomy, machine characteristics, calibration, treatment outcomes
 - Formalized knowledge
 - Guidelines, clinical trials, peer reviewed papers, normal tissue complication models
 - Experience
 - In the head of physicians, physicists, dosimetrists, therapists

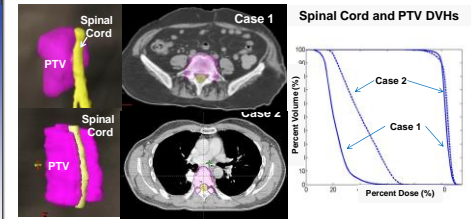
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Building Planning Knowledge Base for RT

- Planning Knowledge Sources
 - Quantitative vs. qualitative
 - Volume, overlaps, etc
 - Guidelines, outcome data, etc
 - Continuous vs. discrete
 - Beam angles, Tradeoffs, etc
 - Numerical vs. Descriptive

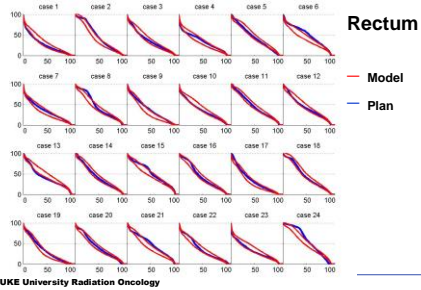
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Building Planning Knowledge Base: All Component of Tx. Plan Design

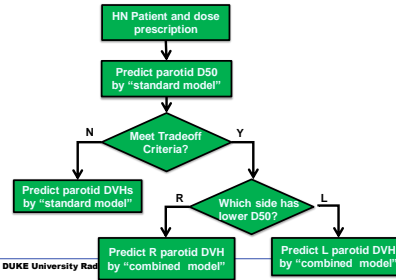


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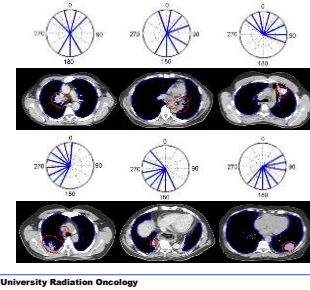
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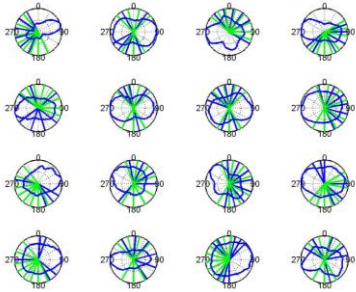
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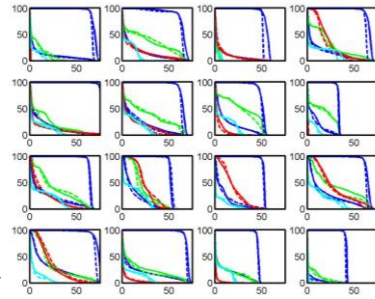
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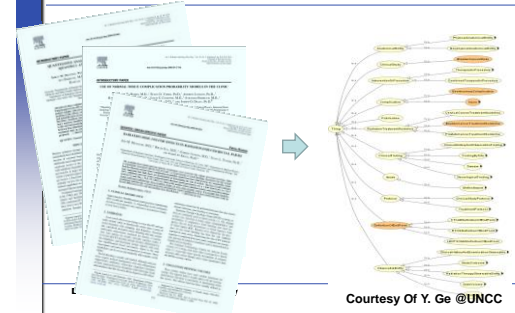
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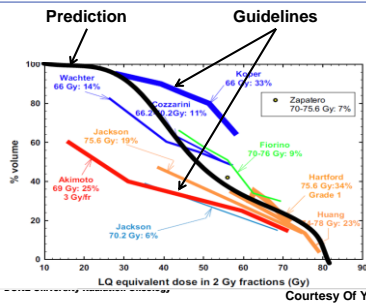


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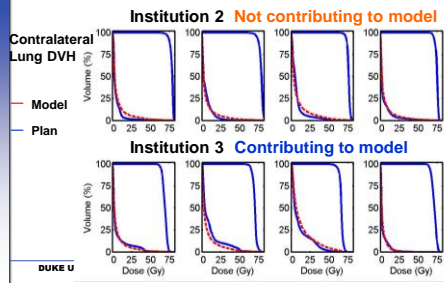
Courtesy Of Y. Ge @UNCC

Building Planning Knowledge Base: Integrated Decision Support Tool



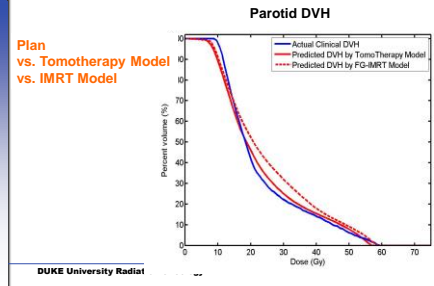
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Building Planning Knowledge Base: Multi-institution, Multi-modality Model



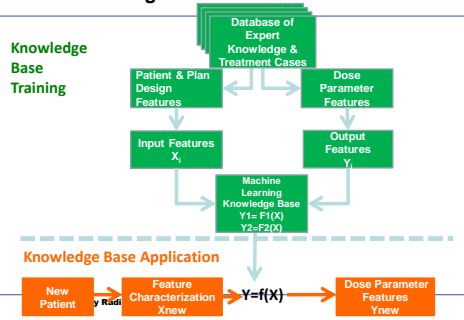
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Building Planning Knowledge Base: Multi-institution, Multi-modality Model



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Building Planning Knowledge Base: Platform Design



Building Planning Knowledge Base: Platform Design

Knowledge Base Application



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THANK YOU!

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