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NEURAL-NETWORK IDENTIFICATION OF CLINICAL TARGET DISTRIBUTION

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Clinical target volume (CTV) is a traditional target delineation method used in radiotherapy. The concept however has several limitations (such as binary conceptualisation, variability and uncertainty). More recently a continuous probabilistic concept - Clinical Target Distribution (CTD) has come into prominence, which addresses these limitations. We report here a neural-network implementation of CTD identification in the treatment planning system and compare it to simulated MRI "ground truth". The CTD method achieves superior normal tissue sparing (mean OAR dose reduction: 29.3%) while maintaining 98.2% target coverage.

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