

A survey of medical dosimetrists' perceptions of efficiency and consistency of auto-contouring software

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ABSTRACT

Although auto-contouring methods were created to reduce the workload for the radiation oncology team, concern lies in whether auto-contouring can improve efficiency regarding generated contours of a treatment plan. Researchers have measured differences between auto-contouring algorithms and manual contour methods specific to the contouring of organs at risk (OAR). The problem lies in the paucity of literature specific to perceptions of auto-contouring and the impact on workflow efficiency. The purpose of this study was to measure medical dosimetrists' perceptions of how auto-contouring software impacts the treatment planning process. To measure perceptions, researchers surveyed medical dosimetrists about their perspectives on consistency and efficiency of auto-contouring during treatment planning. A Qualtrics survey was created based on the 2 research questions in this study. The survey was distributed through email to 2,598 full members of the American Association of Medical Dosimetrist (AAMD) who were certified by the MDCB; mostly medical dosimetrists but also included a small group of medical physicists. The email open rate was 39% (1024/2598) but the response rate for those who read the email was only 8.4% (86/1024). Of the survey respondents, 67% (59/86) used auto-contouring software; thus, eligible to complete the remainder of the survey. A majority of participants agreed that auto-contouring software decreases time spent contouring per patient; however, most agreed that manual contouring is more efficient. Therefore, it was inferred that a combination of both auto and manual contouring have an impact on workload efficiency.

Key Words: Anatomical contouring, workload efficiency, algorithm, deep learning