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ONC-Call: A Hands-On Workshop of Emergent Spine Radiation Therapy for Multidisciplinary Trainees

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Abstract
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Abstract

Purpose: Pathologic spinal cord compression is a common oncologic emergency, often requiring radiation therapy to prevent permanent neurologic dysfunction. Urgent initiation of spinal radiation relies on seamless collaboration between radiation oncologists, radiation therapists, medical physicists, and medical dosimetrists. However, despite the importance multidisciplinary coordination for radiation therapy, structured interprofessional education (IPE) opportunities remain limited within radiation oncology training programs. Moreover, a national needs assessment has shown that radiation oncology junior residents often feel underprepared for on-call emergencies. [1] To address these persistent gaps, we developed a workshop entitled "ONC-Call: A Team-Based Response to Spinal Cord Compression" at The University of Texas MD Anderson Cancer Center.

Methods: The three-hour workshop took place on July 18, 2025, and involved 53 participants, including 10 radiation oncology residents, 7 medical physics residents, 21 radiation therapy students, and 15 medical dosimetry students. Participants were split into five groups, which rotated through five stations focused on each step in the initiation of radiation therapy—patient evaluation, patient simulation, treatment planning, physics quality assurance, and treatment delivery. A patient vignette of lower thoracic spine metastasis was referenced consistently at each station. Stations were led by instructors from the corresponding discipline. The patient simulation and treatment delivery stations took place at a CT simulator and treatment machine, respectively, which were engaged with mannequins to facilitate hands-on education. Participants completed Likert-scale questionnaires before and after the workshop, including an Interprofessional Attitudes Scale (IPAS) [2] for all participants and clinical confidence and multidisciplinary awareness surveys [3] for the radiation oncology residents. Pre- and post-workshop survey responses were compared using Wilcoxon rank sum tests, and two-sided P values less than 0.05 were considered significant.

Results: Response rates were 79% and 75% for the pre- and post-workshop IPAS questionnaires, respectively, and 100% and 80% for the pre- and post-workshop radiation oncology resident-specific surveys, respectively. The baseline IPAS questionnaire responses reflected strongly favorable attitudes across all healthcare domains without any significant differences between pre- and post-workshop responses. However, radiation oncology residents demonstrated significant improvements in 13 out of 14 clinical confidence and multidisciplinary awareness items following the workshop.

Conclusion: This workshop provided an immersive, multidisciplinary training model for the management of pathologic spinal cord compression. While baseline interprofessional attitudes were already positive, the intervention significantly improved radiation oncology residents' clinical confidence and awareness of cross-disciplinary roles. Future iterations of this workshop may incorporate standardized patients, expanded hands-on activities, and additional learning topics.