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## **Timely Initiation of Radiation Therapy Post-Simulation: Identifying Barriers in a Shared Care Model from a Tertiary Care Hospital in LMIC**

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## Timely Initiation of Radiation Therapy Post-Simulation: Identifying Barriers in a Shared Care Model from a Tertiary Care Hospital in LMIC

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**Introduction:** Timely delivery of radiation therapy (RT) is essential for achieving optimal local control outcomes in pediatric patients. This study aims to review the factors contributing to delays in initiating RT following Planning CT scan.

**Methodology:** A retrospective review was conducted of pediatric patients who underwent RT planning. Patients with delays exceeding 10 working days between the planning CT scan and RT initiation were identified. Data on demographics, tumor sites, timelines, and reasons for delays were collected from electronic medical records and departmental logs.

**Results:** Among 178 patients treated between January 2021 and November 2024, 75% (n=135) experienced delays beyond the 10-day benchmark. The mean age was 8 years (range 1–18), with 63% (n=113) being male, and 28% (n=50) treated under general anesthesia (GA). Most patients underwent RT for sarcomas (49%, n=88), lymphomas (24%, n=43), renal tumors (19.6%, n=35), and CNS tumors (4.4%, n=8). All treatment plans were peer reviewed. Delays ranged from 11–15 days in 32% (n=57) of cases, 16–20 days in 15% (n=28), and over 20 days in 25% (n=45).

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The most common reasons for delays were imaging unavailability or radiological discussions (n=75), complex planning (n=46), peer review meeting (PRM) changes (n=35), limited machine availability due to overbooking or breakdown (n=15), and patient-related factors such as cost issues or missed appointments (n=15). Delays of 11–15 days were primarily caused by complex planning and PRM changes, delays of 16–20 days were linked to radiological discussions or scan unavailability, and delays exceeding 20 days were multifactorial.

**Conclusion:** This experience has identified controllable factors contributing to delays in RT initiation and emphasized the importance of implementing measures to expedite radiological discussions and reporting. Moreover, capacity building for complex planning and incorporating early peer review meetings are key strategies to further streamline workflows, and ensure the timely initiation of RT.