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Using Key Performance Indices to Improve Patient access, Quality, and Safety of External Beam Radiotherapy

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INTRODUCTION

To report our experience of using key performance indices (KPIs) of time-to-treatment initiation (TTI) and on-time chart readiness to improve patient access, quality, and safety of external beam radiotherapy

METHODS AND MATERIALS

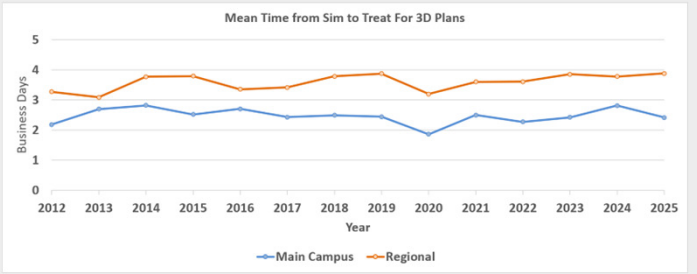
Since 2012, we have measured the time from the simulation to treatment initiation (TTI – business day) and on-time chart readiness, defined as charts completed by four business hours prior to treatment. These KPIs were initially started at the main campus and then extended to regional centers. Separating the main campus and regional centers, we measured TTIs according to treatment modalities, including 3D, IMRT, and SBRT in the past 14 years. To measure sustainability of TTIs, we compared TTIs between the first 7 years (PI) and the second 7 year (PII). The on-time chart readiness was measured for all plans.

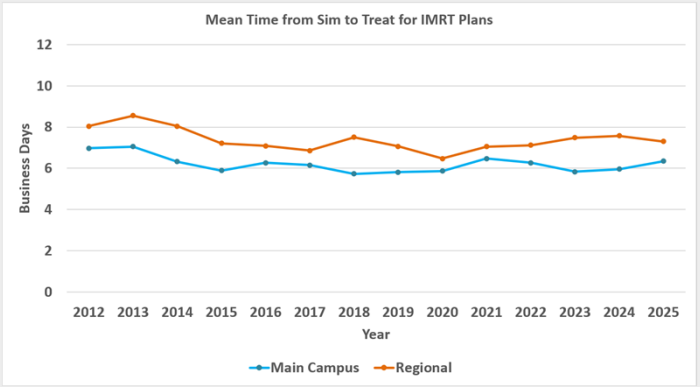
RESULTS

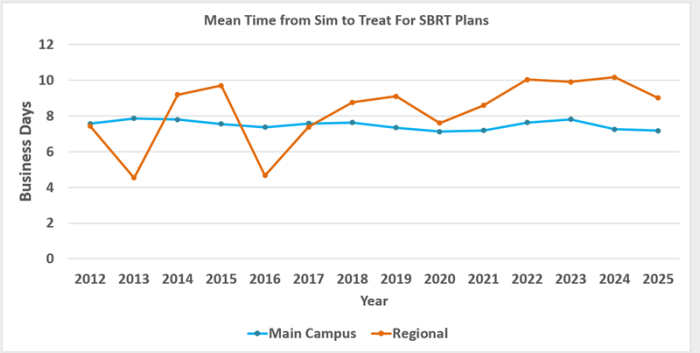
The mean TTI over the 14 years for 3D, IMRT, and SBRT for the main campus and regional centers were 2.5 ± 3.7, 6.2 ± 3.8, 7.5 ± 3.4 days, and 3.6 ± 4.1, 7.3 ± 4.5, 8.2 ± 4.6 days, respectively.

Comparing PI and PII for the main campus, the mean TTIs for 3D (2.5 vs. 2.4 days) and IMRT (6.2 vs. 6.1 days) were stable with p-value > 0.05, and TTI for SBRT (7.6 vs. 7.4 days) was decreased ($p < 0.05$).

RESULTS







Comparing PI and PII for the regional centers, the mean TTIs for 3D (3.5 vs. 3.7 days) and SBRT (7.3 vs. 9.3 days) were increased ($p < 0.05$) and the mean TTI for IMRT (7.4 vs. 7.2 day) was decreased ($p < 0.05$). During past eight years, on-time chart readiness was > 95% for the main campus and regional centers.

CONCLUSIONS

Time-to-treatment initiation and on-time chart readiness as two KPIs enable us to improve patient access while maintaining quality and safety.

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