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abstract

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Leveraging the Power of Scripting and Automation in Radiation Therapy

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Introduction: In 2022, 162163 new cancer cases were diagnosed in Australia, with one in two patients potentially benefiting from radiation therapy. Research involvement among radiation therapists is associated with improved patient outcomes and career satisfaction. However, increased clinical workloads and lack of time are key barriers to participation. Scripting and automation provide time-saving solutions that can help overcome these challenges.

Methodology: In-house scripts were developed using the Application Programming Interface (API) index of the Monaco Treatment Planning System (TPS). These scripts were utilized to streamline routine clinical tasks and support quality improvement projects by automating repetitive processes and enabling efficient data collection and extraction.

Results: Over the past 18 months, several projects have been completed at our regional centre, facilitated by the efficiency gains achieved through scripting. Automation reduced manual workload for repetitive planning and auditing tasks, freeing up time for research activities. The tools also enhanced rapid processing of large datasets, enabling timely completion of clinical audits and retrospective studies.

Conclusion: Scripting has the potential to increase research participation among radiation therapists. By reducing the time burden of repetitive and data-intensive tasks, scripting allows clinicians to focus on study design, analysis, and dissemination. Nevertheless, rigorous quality control remains essential to ensure data accuracy and avoid propagation of errors through automated workflows.

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