Improving Radiation Planning Workflow using Technology

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Background

In the Department of Radiation Oncology, the Dosimetrists will generate Radiation Plan that are used for treating cancer patients. These radiation plans are generated in the Treatment Planning System (TPS) and have to be manually transferred to the Oncology Information System (OIS). The manual process of transferring data from one system to another poses a risk that a wrong radiation plan transferred leading to a mistreatment. Currently, the Dosimetrist has to do manual visual inspections to ensure proper transfer. The aim of this project was to provide a more automated checking tool to ensure that the correct radiation plan has been transferred.

Methodology

Both the TPS and the OIS data are stored in a MSSQL database in their respective servers. SQL stored procedures/queries are written to query the radiation plan parameters from both TPS and OIS’s database. The queried information will be pushed to a 3rd Party Application, where the radiation plan parameters from both TPS and OIS are compared.

Results

The result of the 3rd Party Application allowed customizable checks on the plan parameters. When certain parameters are not matched between the TPS and OIS database, it will highlight the user. This has resulted in a higher catch rate of errors due to manual transfer of data between TPS and OIS.

Conclusion

With the modern technology advancements, IT solution such as 3rd party applications can be created to help automate checks and highlight to users when errors are present. Which in turn provide a safer environment for patient safety ensuring that they are treated with the correct radiation plan.