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RO-ILS CASE STUDY 13

ADHERENCE TO PROCESS: PITFALLS IN REDUNDANT COMMUNICATION PATHWAYS

Introduction:

In addition to the primary treatment planning system (TPS), many practices utilize a secondary software platform for image fusion or contouring prior to the initiation of planning. Radiation oncologists may prefer contouring in these secondary systems for several reasons:

- Streamlining processes (e.g., contouring for brachytherapy in a secondary software while the applicators are marked in the primary brachytherapy software may increase efficiency).
- Preferred contouring tools.
- Easier remote access.

However, utilization of multiple systems can add complexity, additional steps to processes, and comes with the increased risk of miscommunication. For example, each practice needs to develop a workflow to determine who is responsible for transferring the final contour to the TPS and how/when this is triggered. These processes must be standardized, documented in standard operating procedures (SOPs), reviewed regularly for compliance and adjusted, as needed.

Event Overview:

A practice's original process was to signal a completed contour by labeling the contour set "final;" however, the process changed. Per the practice's new standard processes, after contouring a patient's anatomy in a secondary contouring software, the radiation oncologist is to complete the "physician contouring" task on a workflow checklist. The dosimetrist is then responsible for importing the final contour set into the primary TPS.

For one recent case, the physician labeled the planning set as "final" but did not complete the associated checklist. The dosimetrist assumed the contours were finalized, because of the previous procedures. Later, the radiation oncologist made minor changes to one of the target structures in the secondary contouring software and called the dosimetrist to alert them to the change. It was at this time that the dosimetrist discovered the contours were not yet final.

Contributing Factors:

- ***Use of a primary planning system and a secondary contouring software.***
- ***Procedures not followed.*** The clinic workflow states that the completion of the workflow task is the official communication to signal that the final contours are ready for planning. However, confusion arose when the physician borrowed from an old process, the use of the suffix "final." which led dosimetry to believe contours were finalized. Although the physician did not complete the contour task, which was appropriate as they had not finalized the contours, the dosimetrist assumed the old process was being followed and failed to verify the status of the contours. Both the lack of a clarifying question from dosimetry and the use of misleading contour suffices by the physician contributed to this error.
- ***Expectation bias.*** Based on previous experience, the dosimetrist could expect for the contour to be finalized based on the structure set label.

Lessons Learned/Mitigation Strategies:

The practice developed a new process and communication pathway where completion of the workflow task is the intended signal for contour completion and triggers data transfer. However, another parallel communication system was maintained based on the original process, creating a redundant pathway. This indicates that there might be barriers for staff to follow the new procedure of completing a checklist,[1] rendering the checklist ineffective. There are many reasons this may be the case, such as the workflow completion task residing in a different software than the contouring task, adding time and mental burden, particularly if performed through a remote connection. A mitigation strategy could be to reconvene the workflow design team to decide which of the two pathways fulfills the intended goals most efficiently, while minimizing risk of error.

When new workflows are introduced, such as using a secondary contouring software, procedures are developed based on how the clinical team anticipates what the best process might be.[2-4] Often, unexpected challenges arise leading to the development of alternate processes. Therefore, it is essential to review procedures at regular intervals and adjust as appropriate. Procedure review should include discussions of staff deviations and the risk to patients when multiple processes (e.g., communication pathways) are used. In landscape architecture, these sorts of adaptations are called pathways of desire. Every effort should be made to have processes follow "pathways of desire"— the most logical, direct, but still highly safe way to execute a process. Failure to design efficient pathways leads to deviances and subsequent normalization of deviance. We must keep in mind that we often ignore subtractive solutions to problems. This may well be a case in which adding a step (i.e., checking off the checklist)- actually may be less desirable. Practices are encouraged to analyze their incident learning data to identify trends regarding compliance to standard processes and investigate the underlying causes. Addressing the factors that contribute to non-compliance, re-educating staff, and revising SOPs will promote more consistent, standard processes.

Additionally, it is important to nurture a culture where staff feel comfortable prompting others to follow correct procedures, regardless of role. If the dosimetrist realized the SOP was not being followed, they should have felt empowered and comfortable to ask a clarifying question of the radiation oncologist. They should have explained that the status of the contours was not clear because the proper process was not followed. In turn, it is best practice for the physician to thank the team member (or otherwise react positively) for asking a clarifying question. When this kind of follow-up is positively received, it encourages all staff to help each other uphold SOPs in a supportive and collaborative atmosphere.

In patient care, new information (e.g., imaging, peer review, biopsies) will occasionally mandate change to a planning structure set that was perceived to be final. This could have been the case in this scenario. Replanning is time-consuming and can be error prone, therefore it is important to limit unnecessary replanning occurrences. Each practice needs to develop a workflow on how to communicate a change in planning structures, including how to prevent use of the outdated structure set for planning.

In the above case, the error was identified by chance during a phone call and not through standard QA procedures (e.g., a missing required checklist item). It is important to question where hard stops exist in the process and determine when one is necessary. Again, this reinforces the importance of leveraging tools to their fullest and ensuring that quality steps are truly additive and not merely performative.

References:

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4. Mayo CS, Moran JM, Bosch W, et al. American Association of Physicists in Medicine Task Group 263: standardizing nomenclatures in radiation oncology. Int J Radiat Oncol Biol Phys. 2018; 100(4): 1057-66.

