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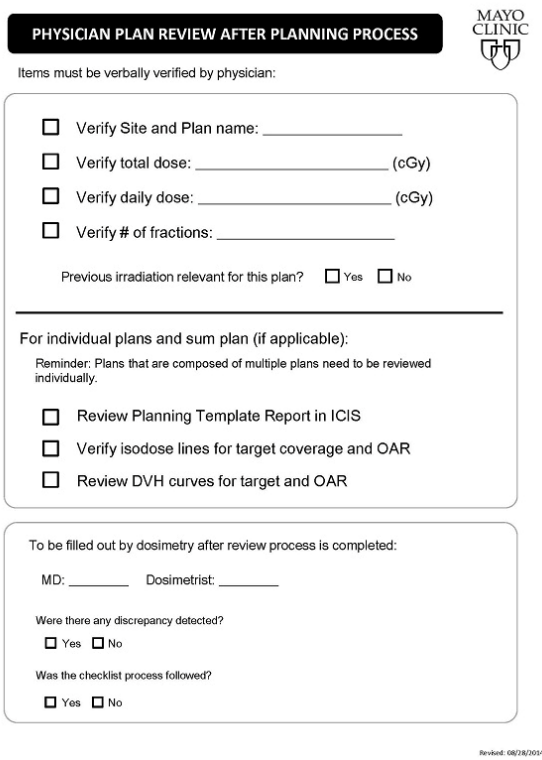
well as the communication dynamics during the plan review process.

Material and Methods: A safety checklist was developed and implemented using checklist's best practices as well as input from physicians, physicists and treatment planners (Figure. 1).



PHYSICIAN PLAN REVIEW AFTER PLANNING PROCESS

MAYO CLINIC

Items must be verbally verified by physician:

- ☐ Verify Site and Plan name: _____
- ☐ Verify total dose: _____ (cGy)
- ☐ Verify daily dose: _____ (cGy)
- ☐ Verify # of fractions: _____

Previous irradiation relevant for this plan? ☐ Yes ☐ No

For individual plans and sum plan (if applicable):

Reminder: Plans that are composed of multiple plans need to be reviewed individually.

- ☐ Review Planning Template Report in ICIS
- ☐ Verify isodose lines for target coverage and OAR
- ☐ Review DVH curves for target and OAR

To be filled out by dosimetry after review process is completed:

MD: _____ Dosimetrist: _____

Were there any discrepancy detected?

☐ Yes ☐ No

Was the checklist process followed?

☐ Yes ☐ No

Revised: 08/28/2014

We used the "Static sequential with verification and confirmation" method to perform the checklist. This method uses both initial configuration and mutual redundancy; the treatment planner writes down and calls the values on the checklist and the physician confirms that those values match the treatment intent. As part of a department practice quality improvement (PQI) project, we used a series of Plan, Do, Study, Act (PSDA) quality improvement cycles, and assessed the effectiveness of the safety checklist and the success of the project implementation. During each plan reviewed by the physician, we tracked two metrics: 1) Effectiveness of the checklist to catch a deviation and 2) Compliance of the physician to the checklist process. Additionally, we used a survey to assess communication dynamics between physician and planner.

Results: The safety checklist was used during a period of 6 months across our entire practice: 40 physicians and 24 planners. 1773 treatments plans were reviewed using the safety checklist process. This sample represents close to 95% of all clinical plans done in our practice during this period of time. The safety checklist helped catching 19 near-misses and also helped achieving 99% overall compliance to the plan review process. Pre- and post-implementation surveys shows improvement on communication dynamics and interaction between physician and treatment planner. Upon completion of the PQI, this safety checklist has become our standard operating procedure for the physician plan review process.

Conclusion: A safety checklist was successfully implemented as a safety barrier as part of the physician plan review process. The utilization of the safety checklist improved communication dynamics, process compliance and standardization, thus, improving the quality of the review process and the overall safety of our practice. This work presents evidence that Safety Checklists are an effective tool in error management as well as a tool to improve process compliance and team communication.

EP-1925

Online open source software to assess adverse events of patients undergoing radiochemotherapy

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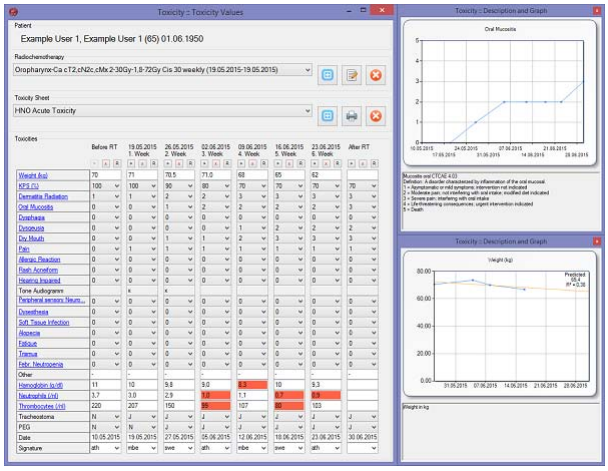
Purpose or Objective: Radiochemotherapy is inherently associated with adverse events and complete, accurate and examiner-independent documentation is essential for everyday clinical work as well as for clinical trials. Acute toxicity during treatment might make it necessary to adapt the current treatment, to interrupt irradiation or to skip or postpone a cycle of chemotherapy. Late effects may become symptomatic even years after treatment has been completed. The common approach to collect toxicity data is to use paper-based documentation which has to be manually fed into databases for evaluation. This method turned out to be time-consuming, error-prone and impractical. In order to address these issues, the software "Toxicity" was developed at the department of Radiation Oncology, Charité Universitätsmedizin Berlin.

Material and Methods: The software can be used simultaneously by multiple users on different computers to add, modify or view patient data, treatment information and adverse events. The software supports the National Cancer Institute Common Toxicity Criteria Adverse Event (CTCAE v4.03), Late Effects of Normal Tissue (LENT-SOMA) classification systems, laboratory values and other special data types, e.g. tone audiograms. The user can look up the definition of each item while entering values and get a graphical representation. Data for adverse events is collected every week for acute and every 3 months for late effects. Questionnaires are specific to the tumor entity, body area and treatment. The collected data is stored centrally in a MySQL database and is statistically analyzable. The software was developed in the cross-platform programming language C Sharp and the target platform is Windows, Mac OS X and Unix.



Results: To evaluate objective user acceptance, we compared the quality of adverse events documentation in our department between 01/2015 and 06/2015 (paper-based documentation) to the quality of documentation between 07/2015 and 10/2015 (software-based documentation). For patients treated until June 2015 patient files were obtained. For patients who had been treated after July 2015 data from "Toxicity" was automatically exported. In the 4 months the "Toxicity" system was used 7336 items were recorded. We can see a statistically significant increase of information recorded per patient.

Conclusion: Our first experience with the "Toxicity" software demonstrates favorable accuracy of adverse events documentation of patients undergoing radiochemotherapy and its applicability as a tool for clinical trials.