

A Route to Sustain Support for Physics Continuous Quality Improvement in Radiation Oncology

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PURPOSE

Continuous quality improvement (CQI) is a dynamic process requiring constant re-evaluation, including evaluation of the reporting system and users feedback.

Leading improvement efforts and keeping the staff engaged are the biggest challenges in a CQI program¹.

This work reports our institutional experience implementing a sustainable and effective Physics CQI program in Radiation Oncology, aiming to standardize the physics clinical practice.

METHOD

The Physics CQI program utilizes a Plan-Do-Study-Act (PDSA)² cycle, involving a Radiation Oncology Physics Dashboard (Dashboard) and monthly meetings.

The Dashboard:

- Used by the physics team members to report, store, and review catches and findings.
- Catches/findings are categorized as minor effect, inconvenience, minor dosimetric error, patient safety, recordable or reportable event.

The monthly meetings:

- Led by the CQI champion (QMP) who presents the catches/findings based on their severity and occurrence.
- To propose workflow changes based on catches/findings to standardize and improve procedures.
- To give opportunity to physics team to provide feedback prior to instituting new workflow or policies and procedures (P&P).
- These presentations are then archived and available to the physics team as support material.

The effectiveness of the Physics CQI program was evaluated through a survey distributed to the CQI participants.

RESULTS

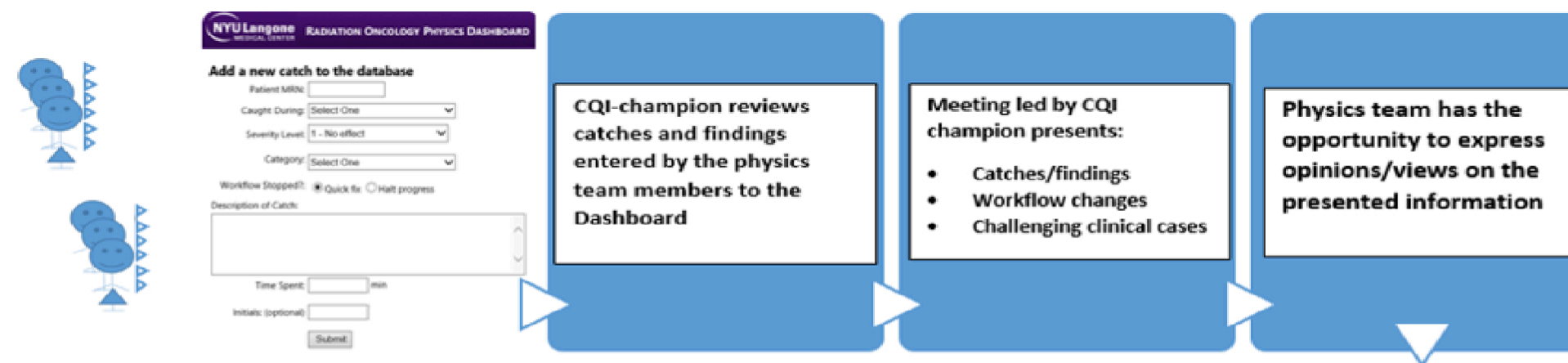


Figure 1: Physics CQI program workflow. From left to right, the figure shows physics team members enter Catches/findings into Dashboard. These events are reviewed and then presented during one hour meetings led by the CQI champion. The meetings give opportunity to physics team members to provide feedback prior to instituting new or changes to workflow or P&P. This process leads to standardization, adds clarification and address any unwanted ambiguity.

Figure 2: Number of catches or findings entered to the Dashboard per month in 2019. The Physics CQI program started in Dec. 2018

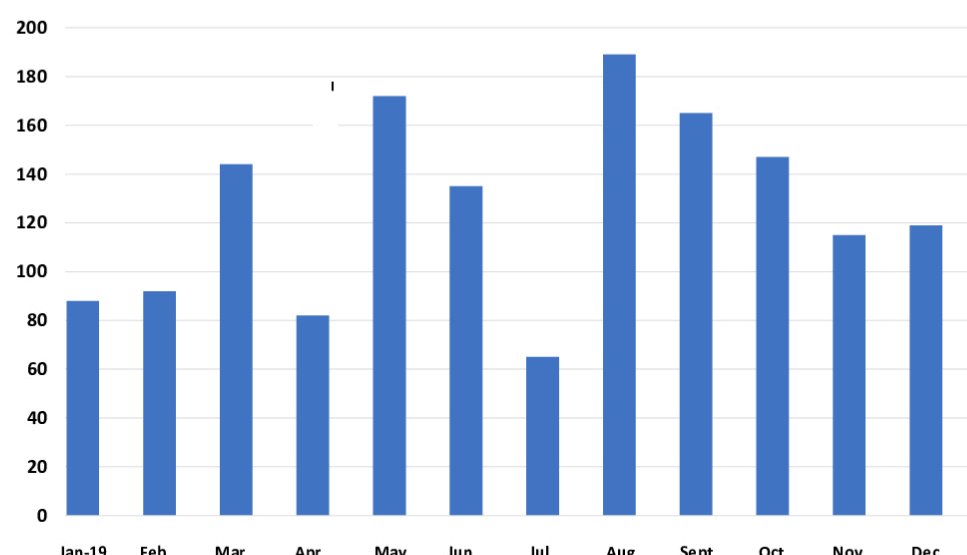
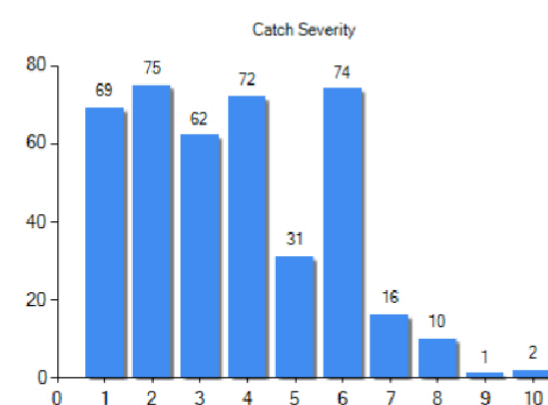


Figure 3: Severity and number of catches



Survey Results:

- Of 15 physics-team members (11 QMP, 1 chief-CMD, and 3 medical physics residents) invited to complete the survey, 14 submitted completed surveys
- 93% agreed that the Physics CQI meetings help improve and standardize processes, promote a culture of safety, and have led to positive changes through clinical case presentations.
- All surveyed responded that the Dashboard is user friendly. 79% reported referencing previously presented topics during independent plan checks, weekly chart checks, and when paged in the clinic.

Table 1: Tasks during which Physics CQI monthly presentations are referenced by the Physics team

| Tasks | Number of Responses |
|-------------------------------------|---|
| Independent Plan Checks (IPC) | 3 |
| Weekly Chart Checks (WCC) | 2 |
| IPC and WCC and Paged to the clinic | 3 |
| IPC and WCC | 2 |
| WCC and Paged to the clinic | 1 |
| None | 3 (2 Y-1 Medical physics residents and CMD) |

CONCLUSIONS

- We have implemented a successful Physics CQI program that provides our physics team with an in house reporting system (Dashboard) and monthly meetings.
- The Dashboard provides a platform to entry catches and findings by the physics team with an option for anonymous entries. At same time it serves as repository to performed root-cause-analysis (RCA) and or Failure Mode and Effects Analysis (FMEA).
- Monthly meetings serve as a participative approach for the physics team to express views and opinions prior to institutionalizing changes or new processes into the clinic. Providing a transparent, collaborative, and constructive approach.
- Our experience with the Physics CQI program shows to be sustainable with high participation, approval, and engagement of the physics team.

REFERENCES

- Schallock RL. A systematic approach to an organization's sustainability. Evaluation and Program Planning. 2016
- Deming WE. Out of the crisis, 1986. Cambridge, MA:Massachusetts Institute of Technology Center for Advanced Engineering Study xiii, 1991.

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