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## Objectives

The Radiation Treatment Program (RTP) at Cancer Care Ontario (CCO) established a Radiation Incident Safety Committee (RISC) in 2011 with the goal of effectively disseminating radiation incidents, as well as supporting knowledge sharing of incident safety information across provincial radiation programs. The initiative has been active since 2002 with the inception of Quality Subcommittee of the Radiation Therapy Advisory Committee, which subsequently became the Radiation Treatment Quality & Safety Committee in 2006, prior to transitioning to RISC in 2011.

## Approach

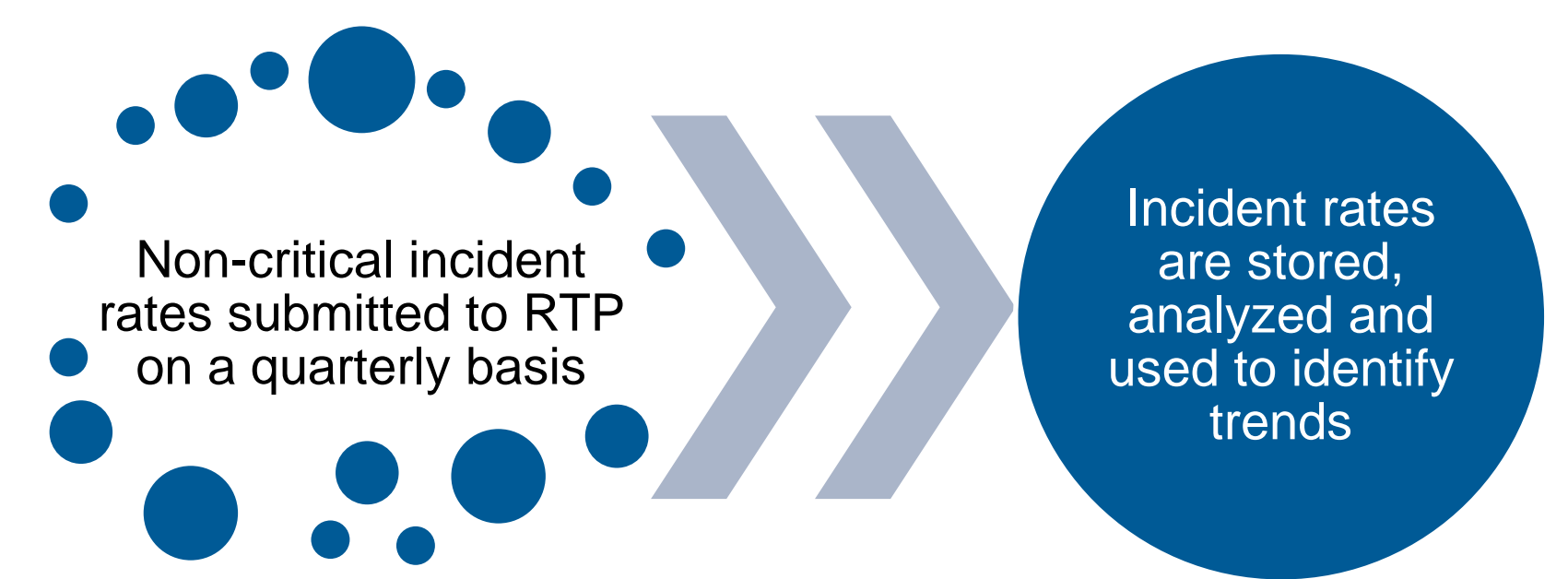
The RTP has recruited Radiation Incident Leads (RILs) from each regional radiation program to ensure full provincial representation within the committee. The RILs' responsibilities include:

- Participating in quarterly teleconferences
- Attending annual face-to-face committee meetings
- Supporting the dissemination of critical and non-critical incidents
- Partaking in knowledge sharing activities

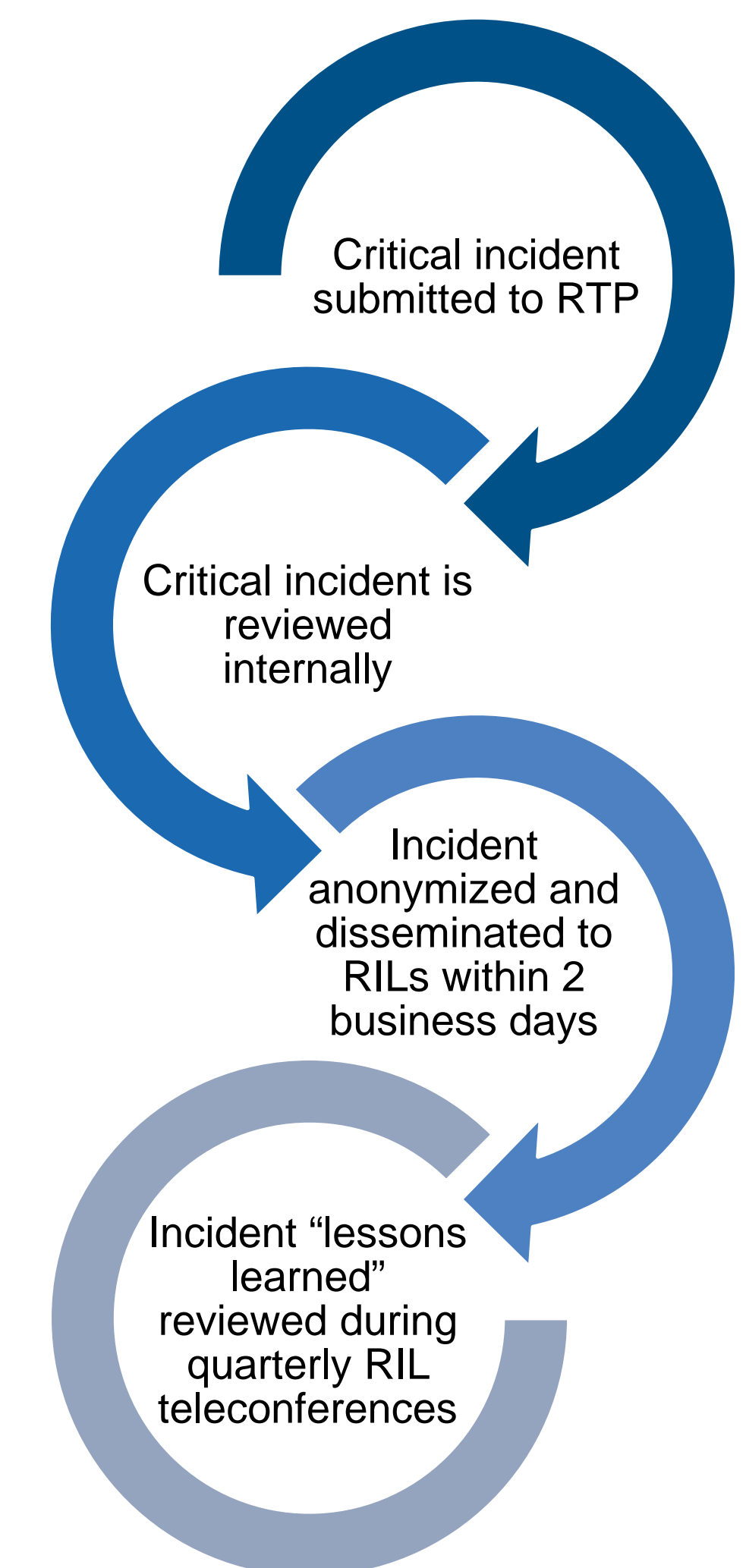
Distinct processes have been established for the dissemination of critical (type I and type II) and non-critical (major, serious, minor) incidents to ensure timely dissemination, knowledge sharing and the development of safety recommendations when required.

Incident dissemination processes have been aligned with incident severity, where critical incidents are disseminated by the RTP within 2 business days and discussed in detail during quarterly teleconferences and non-critical incident rates are submitted by the regional radiation programs to the RTP on a quarterly basis. **Figure 1 and Figure 2** provide an overview of the two established incident dissemination processes.

**Figure 1.** Dissemination of non-critical incident rates



**Figure 2.** Rapid dissemination of critical incidents

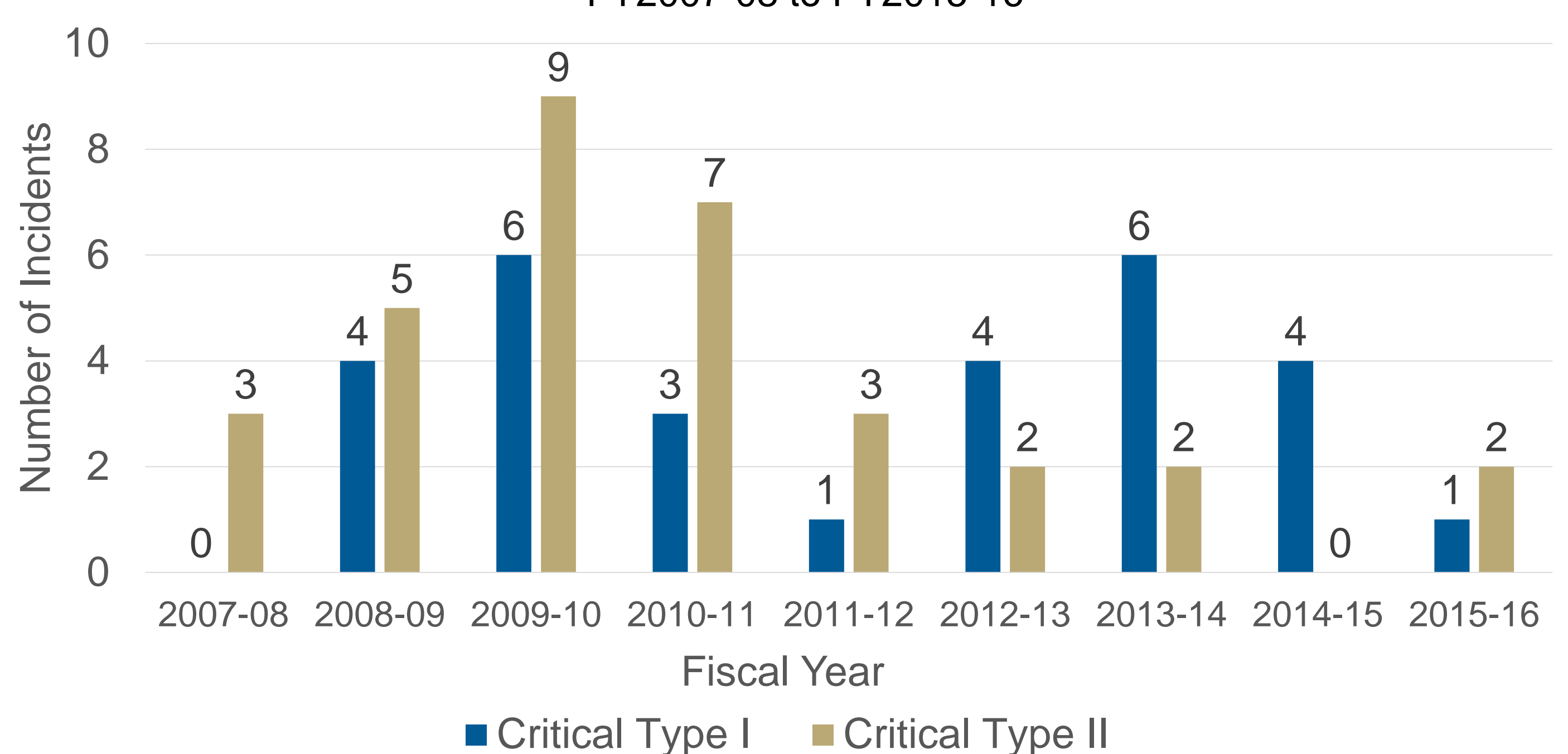


**Figure 3.** Overview of Critical Type I and Critical Type II Incidents

**Critical Type I Incident:** "Hardware or software errors that have a high probability of causing an unacceptable outcome for the patient or that pose an unacceptable risk to staff or members of the public."

**Critical Type II Incident:** "Errors in total dose (>25%) or targeting errors that have a high probability of producing an unacceptable outcome for the patient."

**Figure 4.** Provincial Critical Radiation Incidents from FY2007-08 to FY2015-16



## Results

To date, RISC has made significant achievements in enhancing the safety of radiation treatment (RT) delivery in Ontario through:

- Establishing a robust process for the provincial collection and dissemination of critical and non-critical radiation incidents. **Figure 3** provides a definition of Critical Type I and Critical Type II incidents<sup>1</sup>
- Modifying provincial reporting practice with the aim of strengthening incident data collection to aid in identifying potential corrective actions and key learnings. As demonstrated by **Figure 4**, the total incidence of critical incidents has declined since fiscal year 2013-2014<sup>2</sup>
- Participating in quarterly teleconferences and annual in-person meetings to share details regarding critical incidents and safety recommendations
- Commencing the development of program-specific incident learning rounds to help support knowledge sharing and process improvements
- Collaborating with the Canadian Institute for Health Information (CIHI) to develop a taxonomy and pilot the National System for Incident Reporting in Radiation Therapy (NSIR-RT)

## Conclusions

RISC is highly effective in improving safety within RT as demonstrated by the observed impacts and gains since its inception in 2011.

Currently, the committee is working on building upon existing patient safety initiatives. Work continues with CIHI around the piloting and imminent province-wide rollout of NSIR-RT, which will facilitate provincial incident data collection and improve analysis. In addition, the committee is working on developing robust resources for provincial Incident Learning Rounds in an effort to increase incident learning and sharing.

As demonstrated by the committee's progress to date, ongoing and future efforts undertaken by RISC will continue to make significant impacts on patient safety throughout Ontario.

## References

1. Cancer Care Ontario. Ontario Quarterly Radiation Incident Reports: Fiscal Year 2007-2008 to Fiscal Year 2015-2016
2. Consensus recommendations for incident learning database structures in radiation oncology. *Med Phys.* 2012 Dec;39(12):7272-90. doi: 10.1118/1.4764914