

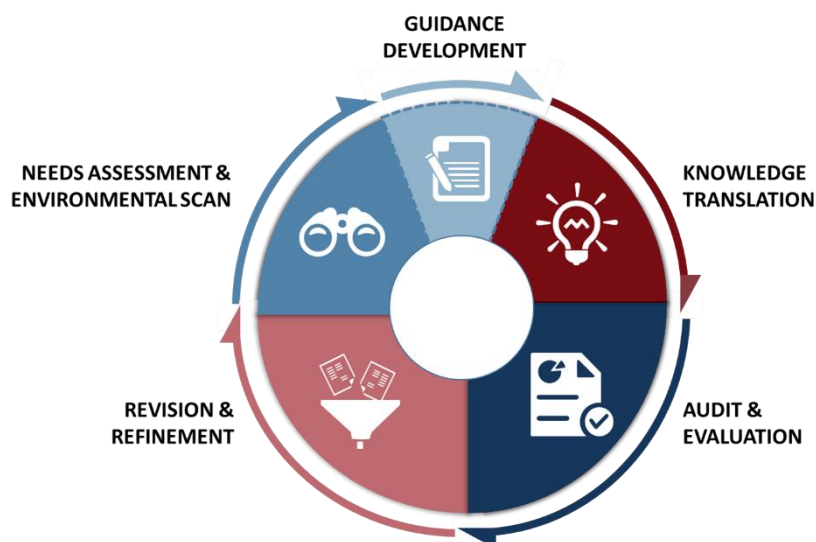


ROSQ

ESTRO's Canadian partners in international quality improvement initiatives

The European Society for Radiotherapy and Oncology (ESTRO) and the Canadian Association of Radiation Oncology (CARO) have been long-time partner organisations and have created tremendous opportunities to collaborate on various initiatives such as those related to quality improvement (QI) in radiotherapy. Through ESTRO international membership, Canadian representatives are able to contribute to QI initiatives such as the Radiation Oncology Safety Education and Information System (ROSEIS) through committee involvement in ESTRO's Radiation Oncology Safety and Quality Committee (ROSQC) or the comprehensive quality management course as international faculty. While the membership profiles of the two organisations are certainly different, given the large number of European countries as compared with the single yet geographically vast country of Canada, the principles of QI initiatives are universal, with a mandate to promote high-quality and safe radiotherapy for all. Since its inception in 2010, this has been the mandate that guides the Canadian Partnership for Quality Radiotherapy (CPQR), a unique partnership of all three Canadian radiotherapy professional organisations, namely the CARO, the Canadian Organization of Medical Physicists (COMP), and the Canadian Association of Medical Radiation Technologists (CAMRT).

Figure 1. CPQR model of QI guidance development



1.	Needs assessment and environmental scan	Information gathering
2.	Guidance development	Guidance document development (with input from radiotherapy community, experts, literature) and finalisation (following radiotherapy-community review)
3.	Knowledge translation	Guidance document release and promotion
4.	Audit and evaluation	Radiotherapy centre self-audit along with identification of potential facilitators of and barriers to compliance
5.	Revision and refinement	Based on radiotherapy-community feedback and experience

Stakeholder engagement has been a central tenet of the CPQR's approach to the cultivation of its deliverables through a step-wise iterative approach (Figure 1), as it was a grass-roots initiative from its inception, with a multi-disciplinary pan-Canadian steering

committee and a CPQR representative position in each of the 46 radiotherapy programmes. The CPQR has become a recognised pan-Canadian and international QI leader, through the successful implementation of several large-scale QI initiatives including the identification of key quality indicators (KQIs) in the 2011 seminal guidance document Quality Assurance Guidelines for Canadian Radiation Treatment Programs. This is a 'living' document that is available online for public access (<https://www.cpqr.ca/wp-content/uploads/2020/03/QRT2019-12-04.pdf>). It has been updated twice through radiotherapy community consultation that was coordinated through a collaboration between CPQR and the CARO quality and standards committee. Ultimately, these KQIs were embedded into Accreditation Canada's radiation treatment standards in 2017, and this incorporation established the expectation of programme compliance.

The CPQR has since expanded its priorities to build upon guidance for individual QI. In 2020, CPQR launched a suite of self-audit tools to assist programs in periodically assessing their compliance with these guidelines supporting incremental improvements in local quality and safety:

1. Technical quality control (TQC)
It includes hardware and software tests and provides direction for assurance of optimal radiotherapy performance (<https://www.cpqr.ca/programs/technical-quality-control/>).
2. Incident reporting
Through a partnership with the Canadian Institute for Health Information, a national system for incident reporting - radiation treatment (NSIR-RT) was launched in 2017.
3. Access to care
It aids in the identification and reduction of inequities in access to radiotherapy (<https://www.cpqr.ca/programs/access-to-care/>).
4. Patient-centred initiatives
It covers patient engagement, education and patient-reported outcomes (PROs) (<https://www.cpqr.ca/programs/patient-centred-initiatives/>).
5. Big data
It supports the use of common nomenclature for radiotherapy prescribing and practice as a first step towards big-data analysis to evaluate patient-, diagnosis- and treatment-related factors that affect oncology patient outcomes (<https://www.cpqr.ca/wp-content/uploads/2021/04/UCN.2021.03.01.pdf>).

The CPQR was supported initially through financial and strategic backing from the Canadian Partnership Against Cancer, but it transitioned in the autumn of 2021 to become a standing committee within the Canadian Association of Provincial Cancer Agencies (CAPCA). The CPQR is now well positioned to exert a top-down influence on the uptake of radiotherapy KQIs, while it supports the grass-roots approach on which the CPQR was founded by maintaining the model of a pan-Canadian radiotherapy network to promote system-level change. The CPQR will continue to leverage local point-of-care champions within each radiotherapy programme regarding QI initiatives that remain under the CPQR (KQI/Accreditation Canada and NSIR-RT) as well as those that have been divested to partner organisations, the COMP (TQC) and the CARO (patient-centred initiatives). Through continued collaboration with the CPQR under the CAPCA, it is expected that the organisers of various pan-Canadian QI initiatives will maintain momentum by following the iterative process that has been the key to the success of all other CPQR initiatives to date.

The CPQR-divested big data and artificial intelligence (AI) initiative are now of high priority. The COMP is taking the lead but recognises the need for multidisciplinary collaboration, so representatives from the three radiotherapy professional societies have formed the Canadian artificial intelligence and data in radiotherapy alliance (CADRA) under the COMP's quality assurance and radiation safety committee (QARSAC). While the previously released Guidance on the Use of Common Nomenclature in Canadian Radiation Treatment Programs was focused on the promotion of the American Association of Physicists in Medicine (AAPM)'s task group-263 guidelines, there is now an opportunity to expand upon this 'living' document to include the AAPM's recently released Operational Ontology for Radiation Oncology (OORO) with a prioritised set of key elements, attributes and relationships for radiotherapy data.

ESTRO has had members at the table alongside those of the other radiotherapy professional societies in this multinational and multidisciplinary collaboration of the COMP, the CARO, the CPQR and the American Society for Radiation Oncology. The collaboration is spearheaded by the AAPM's big data subcommittee. This is a truly international QI initiative that is aimed to facilitate the analysis of data regarding treatment and patient outcomes. The results may be used to inform population-based decisions regarding optimal radiotherapy delivery. The OORO engagement method for multi-stakeholder, consensus-driven, standardised ontology development provides a strong foundation for the continued collaboration of radiotherapy professional societies. This partnership-building among professional radiotherapy societies is likely to be a key to the success of ESTRO's current initiative to establish quality indicators of its own, as it considers the unique needs of its membership while it builds upon universal standards that have been established to date through the efforts of others including the CPQR and its partners, the CARO, the COMP and the CAMRT.





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