

# The Canadian Artificial Intelligence and big Data in Radiotherapy Alliance – CADRA

## AIM

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The Canadian Artificial intelligence and big Data in Radiotherapy Alliance (CADRA) will serve to provide a pan-Canadian governance structure with respect to Big Data (“BD”), Artificial Intelligence, Machine Learning and Deep Learning (“AI”) as they relate to radiation oncology practice.

Big data includes both structured data and unstructured data such that can be used to reveal patterns, trends, and associations with particularly relevant applications in healthcare. Artificial intelligence (AI) is an umbrella term that encompasses a diverse array of technologies, including and harnessing automation, aspects of robotics, machine learning, and other approaches to the interpretation of big data (BD). In addition, big data is also a lever for other areas of radiation oncology focus including but not limited to re-irradiation data sharing, patient reported outcomes, and emergency preparedness data sharing.

## IMPETUS

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Initially, the pan-Canadian RT Big Data initiative was under the mandate of the Canadian Partnership of Quality Radiotherapy, leading to work such as the “Guidance on the Use of Common Nomenclature in Canadian Radiation Treatment Programs” released Spring 2021. However, when CPQR’s structure changed as it transitioned under the Canadian Association of Provincial Cancer Agencies in 2021, the various CPQR initiatives were divested to partner organizations . See figure 1. The data initiative was divested to COMP, although an inherent link between big Data and Patient Reported Outcomes (divested to CARO) was appreciated. CADRA was borne from the recognition that data/AI initiatives are critical to all 3 RT professional societies of COMP, CARO & CAMRT.

## RELATIONSHIPS AND REPORTING

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The Canadian Association of Medical Radiation Technologists (CAMRT), the Canadian Association of Radiation Oncology (CARO) and the Canadian Organization of Medical Physicists (COMP) recognize the invaluable tool AI and BD is and will continue to be specifically in the inter-professional practice of radiation oncology. The partner organizations have established the Canadian Artificial intelligence and Data in Radiotherapy Alliance (CADRA) in alignment with the strategic plans of the partner organizations including Canadian Partnership for Quality Radiotherapy and the Canadian Association of Provincial Cancer Agencies.

CADRA is a subcommittee of the Quality Assurance and Radiation Safety Advisory Committee (QARSAC) and reports to the COMP board through the that route. The Canadian Artificial intelligence and Data in Radiotherapy Alliance (CADRA) steering committee (SC) shall report to the boards of the partner organizations the CAMRT and CARO and as well as CPQR as they are expected to work closely together and allow of CAPCA liason.

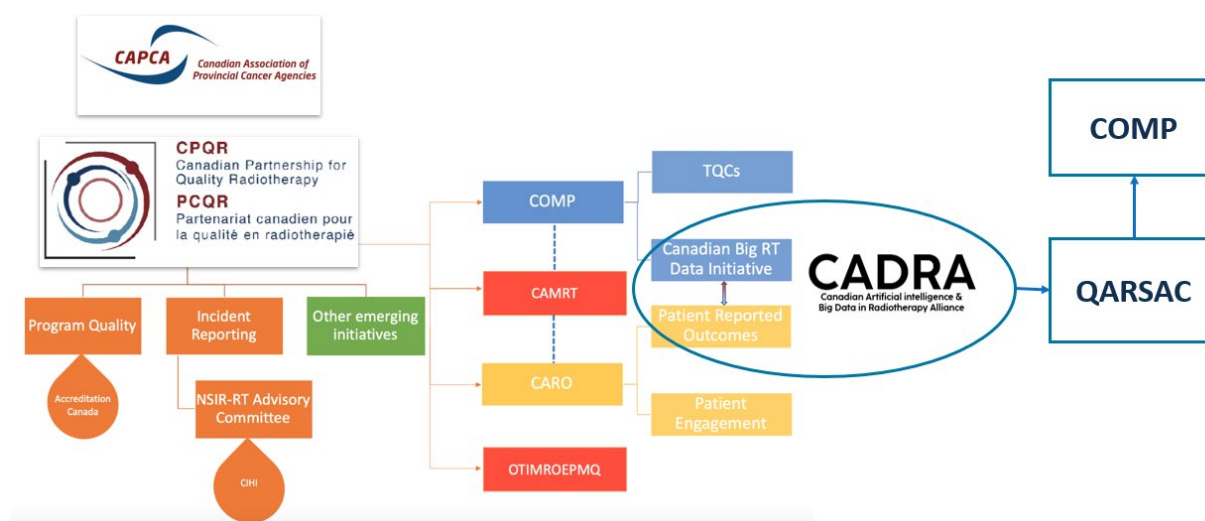


Figure 1: CADRA reporting and partner relationships.

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