

Canadian Medical Imaging Inventory: 2019–2020

Key Messages

Of the six imaging modalities captured in the survey:

- CT is the most common modality, with 549 machines in Canada – up from 484 machines in 2010.
- MRI is the second most common modality, with 378 machines in Canada – up from 281 machines in 2010.
- There are 57 PET-CT machines in Canada – up from 40 in 2010.
- There are 305 SPECT machines in Canada – down from 618 (including gamma cameras) in 2010.
- There are 271 SPECT-CT machines in Canada – up from 98 in 2010.
- There are 5 PET-MRI machines in Canada.
- The number of most imaging modalities is growing. SPECT-CT is experiencing the fastest growth and CT the slowest growth.
- Trends over time suggest that SPECT units are being replaced by SPECT-CT units. SPECT is the only imaging modality of those surveyed that showed a decline in numbers over a 10-year period.
- For each imaging modality, approximately 60% of all growth between 2010 and 2019–2020 can be attributed to two provinces – Quebec and Ontario.
- As for the total number of exams, CT is the most-used modality (5.41 million exams per year), followed by MRI (2.33 million exams per year), SPECT and SPECT-CT combined (1.2 million exams per year), and PET-CT (125,775 exams per year). Currently, PET-MRI is used solely for research.
- Regarding the average number of hours each machine is used, MRI is the most heavily used at 87 hours per week, followed by CT at 80 hours per week. The other imaging modalities are used for 40 hours to 45 hours per week.
- Most imaging machines are located in large city hospitals, with the greatest number and variety in Ontario, Quebec, Alberta, and British Columbia.
- Prince Edward Island and the territories have the lowest number of machines.
- CT is the only imaging modality that is available in every province and territory.
- Most imaging equipment has been operating for 10 or fewer years.

- Compared with other countries in the OECD–Organisation for Economic Co-operation and Development, Canada ranks in the lower half for the number of CT, MRI, and PET-CT machines per population. In terms of the number of CT, MRI, and PET-CT exams per population, Canada appears to be around the midpoint.

Context

Medical imaging is a vital component of modern health care, playing a role in the diagnosis, staging, and monitoring of many diseases and conditions. As new medical imaging technologies become available and population needs change, it is important to keep track of where imaging capacity exists and how equipment is being used. This is the third iteration of the Canadian Medical Imaging Inventory (CMII) since CADTH resumed the collection of this data in 2015. Previously, CIHI–Canadian Institute for Health Information collected data on medical imaging technologies in Canada from 2003 to 2012.

Technology

There is a range of imaging modalities, each with its own characteristics. For the 2019–2020 inventory, CADTH collected data on the following six modalities:

- CT
- MRI
- single-photon emission computed tomography (SPECT)
- PET-CT
- PET-MRI
- SPECT-CT.

Issue

As the medical imaging landscape in Canada changes and new imaging technologies become available, it can be difficult to know which equipment to use and how best to manage finite resources. An up-to-date inventory of medical imaging equipment can help with planning for upgrades, installations, replacements, and decommissioning. It can also provide valuable insights into usage trends over time, patient access, appropriateness, and service delivery.

Methods

CADTH collected data on imaging equipment using a web-based survey and a search of the literature. After the survey closed on February 11, 2020, validators reviewed the data for accuracy and provided additional information. New data were merged with data collected from the previous iteration of the report.

Results

Data were available for 455 sites. Most imaging machines captured in the survey are publicly funded and predominantly used for clinical purposes, although they can be used for research purposes, as well. Based on this collected data, CADTH developed the 2019–2020 CMII, with the results published in a final report. The CMII provides insight into the landscape of medical imaging in Canada and paves the way for the ongoing exploration of medical imaging issues.

Read more about CADTH and this topic at:
cadth.ca/cmii



Questions or comments about CADTH or this tool?



Online:
cadth.ca



Email:
requests@cadth.ca



Twitter:
[@CADTH_ACMTS](https://twitter.com/CADTH_ACMTS)



New at CADTH Newsletter:
cadth.ca/subscribe

DISCLAIMER

This material is made available for informational purposes only and no representations or warranties are made with respect to its fitness for any particular purpose; this document should not be used as a substitute for professional medical advice or for the application of professional judgment in any decision-making process. Users may use this document at their own risk. The Canadian Agency for Drugs and Technologies in Health (CADTH) does not guarantee the accuracy, completeness, or currency of the contents of this document. CADTH is not responsible for any errors or omissions, or injury, loss, or damage arising from or relating to the use of this document and is not responsible for any third-party materials contained or referred to herein. Subject to the aforementioned limitations, the views expressed herein do not necessarily reflect the views of Health Canada, Canada's provincial or territorial governments, other CADTH funders, or any third-party supplier of information. This document is subject to copyright and other intellectual property rights and may only be used for non-commercial, personal use or private research and study.

ABOUT CADTH

CADTH is an independent, not-for-profit organization responsible for providing Canada's health care decision-makers with objective evidence to help make informed decisions about the optimal use of drugs and medical devices in our health care system.

CADTH receives funding from Canada's federal, provincial, and territorial governments, with the exception of Quebec.

January 2021