

SHAPING THE CANADIAN HEALTH ARTIFICIAL INTELLIGENCE (AI) ECOSYSTEM



HEALTH AI IN CANADA

The Government of Canada has acknowledged the immense potential of AI to impact many traditional sectors. It has thus made significant efforts to secure a leading position for the country in the global AI race. Now in its second phase, with investments totaling more than \$550M, the pan-Canadian AI strategy aims to solidify the country's capacities to :

- Conduct high quality research in world renowned AI research institutes;
- Attract acclaimed researchers and train new remarkable AI talent;
- Translate research into commercial applications adopted by canadian businesses;

The healthcare sector presents opportunities for high societal impact to AI developers such as contributing to earlier and more accurate diagnosis, advanced personalized care, increased confidence in decision-making and improved patient outcomes. But further efforts are needed to shape the Canadian Health AI Ecosystem in order to achieve this great potential.

ROCHE POSITION

AI is well embedded at Roche. Today, Roche partners to design and use AI to power both its health solutions offering to consumers and its internal value chain, from optimization of R&D to automation in manufacturing and supply chain processes. Through our engagement with the AI community, Roche identified three key priorities to improve delivery of health AI solutions:

- Health must be promoted in AI research. Health AI research leadership will occur by combining best-in-class research, directed financial support and access to quality Health Data sets, as found in the Roche Health Data position.
- Data science needs to be framed in ethical principles. Fairly new concepts are emerging to facilitate ethical business conduct in AI. Roche invests in initiatives that expand notions such as Responsible AI, Open Innovation and Learning Health Systems.
- Health AI innovations require support all through the value chain in order to reach their full potential to benefit patients. The road to commercialisation is long and hard, but can be eased by an ecosystem of active stakeholders and nurturing initiatives.



In order to create this comprehensive Canadian Health AI Ecosystem that sees innovations go efficiently from the laboratory to the bedside, Roche recommends the following:

Create a market for Health AI

A mature environment fosters innovations beyond academic research. All stakeholders, public and private, should be empowered to contribute to bring innovations to life. Given the distinct nature of the healthcare market, further investments are needed to:

- Support translational research, from enabling the health system to express its needs to incentivizing developers to find innovative solutions;
- Stimulate public-private partnerships to reduce time to patient;
- Incentivize healthcare organizations to implement AI innovations.

Build trust through comprehensive regulation

The AI regulatory landscape is evolving due to increasing demands for accountability and transparency around new technologies. There is a need for clear and predictable regulatory processes and up to date standards of clinical practice to reassure stakeholders developing and implementing innovations in healthcare settings. Although existing medical technology regulation may be leveraged, the risk associated with AI enabled health innovations should be assessed based on intended use and design. Regulators need to engage in discussions to :

- Elaborate new and relevant regulation to address documented public concerns;
- Modernize professional responsibilities and accountabilities for health professionals in regard to the use of AI-powered tools;
- Raise public awareness and literacy to the benefit of social acceptance and trust in AI technology and its potential to augment care.



Promote a wholesome Health AI ecosystem

Thriving industrial ecosystems emerge when dynamic stakeholders from different backgrounds come together under a common domain. Promoting both competition and cooperation, industrial clusters enhance business productivity and focused innovation. In order to support industrial mobilization around Health AI in Canada we must :

- Build institutions for collaboration. Stakeholders need platforms to share, find commonalities in the challenges they face and create solutions to address them;
- Grow the cross sectorial (health + AI) talent pool. Incentivise businesses to attract, integrate and retain Health AI talent in Canada;
- Improve data infrastructure.

ONGOING ROCHE AI INITIATIVES

Roche launched in April 2020 a multi-industry data science coalition known today as AIR (AI with Roche), a center of excellence that focuses on advancing digital transformation in health, marrying Roche's longstanding history of leadership in health and life sciences, and Canada's national AI institutes' – Amii, Mila, and the Vector Institute – established track record of excellence in AI research and enabling industry application.

AIR works to deliver quality AI-based digital solutions that optimize and reduce the cost of healthcare delivery, improve health outcomes, and enable Canada to learn and nimbly respond to opportunities and potential challenges in the healthcare system. AIR also offers the multi- disciplinary AI community a platform to engage on and discuss key topics such as:

- Enabling Learning Health Systems in Canada;
- Harnessing the power of Open innovation;
- Establishing guardrails for the development of Responsible and Trustworthy AI.

The AIR community believes impactful solutions start with the patient and seeks to bring its expertise to partnerships and solutions that put the person first, and that facilitate the best experience and outcome for that person throughout their healthcare journey.

If you require this information in an accessible format, please contact Roche at 1-800-561-1759.

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