

5G applications could yield \$10 billion to \$15 billion in productivity gains to the health care industry in Canada by 2030.

5G Impact on the Health Sector

In Canada, total health expenditures are almost 13% of total GDP, or \$308 billion. This proportion has increased steadily over the past several decades. Cost pressures continue because of Canada's aging population and the rising costs of equipment, medical supplies, and labour.

Meanwhile, access to quality care is challenged by Canada's geography: almost one-fifth of Canadians live in rural communities, yet they are served by only 8% of the total number of physicians in Canada.

5G solutions can help address the many and diverse challenges facing Canada's health care industry. Below are some examples of 5G solutions and the benefits they bring to the health care industry:

| | Benefits | | | |
|---|---------------------------|-----------------------------|---|--------------------------|
| | Improves patient outcomes | Improves patient experience | Reduces system costs and inefficiencies | Reduces carbon footprint |
| Enhanced virtual care capabilities such as augmented reality-enabled medical consultations and diagnoses | ● | ● | ● | ● |
| Enhanced personalized treatment enabled by continuous monitoring devices and big data analytics | ● | ● | ● | |
| Remote-delivered training of medical personnel leveraging virtual and augmented reality capabilities | | | ● | ● |
| Remote-operated surgeries delivered by robots | | | ● | ● |
| Equipment monitoring to continuously monitor equipment health to optimize utilization and reduce downtime | | | ● | |
| Smart buildings applications to optimize energy use | | | ● | ● |

Importantly, fixed wireless access (FWA) using 5G networks will allow network operators to deliver ultra-high-speed broadband internet over a wireless network to homes and businesses in rural and remote regions where last-mile fibre is unfeasible, and will expand the reach of virtual care models to remote communities and homes. As well, 5G will deliver new interactive capabilities built on augmented and virtual reality, and artificial intelligence technologies that enhance the quality of life for those living with disabilities.

One estimate suggests 5G will drive global productivity gains of US\$530 billion in the health care sector by 2030. **A corresponding estimate for Canada is that 5G will drive between CAN\$10 billion to \$15 billion in productivity gains by 2030.**

Policy recommendations

Fast tracking the deployment of 5G infrastructure to health care hubs and rural and remote regions is critical to achieving these benefits. For this reason, the federal government should:

- ❖ Avoid the use of set-asides in auctions, which have not been successful in delivering rural and Indigenous connectivity;
- ❖ Prioritize rural investment, using rural deployment conditions such as strong build-out requirements for remote areas and coverage obligations for households with no internet access; and
- ❖ Require companies to deploy spectrum within three years of purchase rather than treat it as a speculative investment.

Policies to support adoption in the health care industry are also critical. For example, governments should:

- ❖ Evaluate lessons learned from the expanded use of telemedicine during the Covid-19 pandemic with an aim to further expand its use to enhance improve patient outcomes, improve the patient experience, and extend access to underserved populations and individuals;
- ❖ Cultivate digital innovation in the industry by supporting collaborations between health care providers, technology providers and research institutions to design, build and test 5G-enabled solutions;
- ❖ Support the reskilling of the health care industry workforce for the digital economy;
- ❖ Improve digital literacy and skills among patients and clinicians; and
- ❖ Create a national virtual care strategy to ensure universal access to virtual care, especially for patients in underserved communities that cannot access physical clinics.

Further, the subscription of 5G services should be measured, tracked, and reported to demonstrate the quantitative linkages between 5G use and the industry's performance.

Sources used to inform the figures in this brief are:

- PWC. *The Global Economic Impact of 5G*. 2021.
- Rand Europe. *The potential socio-economic impact of telemedicine in Canada*. 2021.
- Canadian Institute for Health Information
- World Bank
- Statistics Canada

Deetken Insight was commissioned by TELUS to complete a comprehensive review of published research about 5G and its potential socio-economic impacts, with a particular focus on Canada. This brief is based on that report. Access the full report including a bibliography here: <https://deetken.com/socio-economic-impacts-of-5g/>. We provide no opinion, attestation, or other form of assurance with respect to the completeness, accuracy, fair presentation, and findings from research of others that are presented in the report.



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