

INTEROPERABILITY SAVES LIVES

HEALTH DATA INTEROPERABILITY WORKING GROUP



PLAIN LANGUAGE SUMMARY

To create the conditions for safe care, healthcare teams require accurate health information upon which to establish a care plan. If that health information is inaccurate or unavailable, the likelihood of making errors in care resulting in harm to patients increases. Health teams cannot function safely if they lack access to information or cannot effectively communicate or share information needed for care. As such, it is essential for a patient's care team to be able to access an individual's complete health information at all times. A patient's care team includes the patients themselves, their loved ones, caregivers, and the health care providers caring for them. To achieve this, the various electronic medical record (EMR) systems used in different clinics and hospitals must be able to share health information so that it follows a patient over time and location. The ability of different digital charting systems to seamlessly share patient information is called *interoperability*. Unfortunately, in Alberta and Canada, information often cannot be easily shared putting the safety of patients at risk. The purpose of this report is to examine whether the comprehensive sharing of health information, or interoperability, will improve the safety of patient care and improve health system function.

The *Canada Health Act* is federal legislation that dictates how publicly funded health services in Canada's thirteen provinces and territories - commonly called "medicare" - must function. The Act states that the primary function of Canadian health service is to "*to protect, promote and restore the physical and mental well-being of residents of Canada and to facilitate reasonable access to health services without financial or other barriers*".¹ The promotion and restoration of physical and mental health and wellbeing is achieved by delivering *quality health care*. A literature review on the impact of the comprehensive sharing of health information, or interoperability, on the quality of health care delivered to patients reveals that it can:

- Improve the safety, efficiency, and effectiveness of health services.
- Result in long-term health system cost savings.
- Improve the equity of health services.
- Improve access to timely health services.

Conversely, evidence suggests that a lack of health data interoperability can result in unsafe practices, resulting in harm to *patients, populations, and the health care system*. The forms of harm include:

- Damage to people's health.

¹ Government of Canada, Canada Health Act, 1985, (<https://laws-lois.justice.gc.ca/eng/acts/c-6/page-1.html>)

- Breach of legal and ethical rights to personal health information.
- Failure to benefit from science and use health information for public good.
- Failure to optimize health system function and efficiency.
- Health care provider burnout.
- Failure to support health innovation.

These findings suggest that the quality of health service in Alberta is likely to improve, and if patient health information can be properly shared with those who require it, harm to patients and the health system is likely to decrease. Stated more simply, health data interoperability will improve the safety of health care.

Further, evidence suggests that comprehensive health data interoperability will be of independent benefit to many organizations and services including government, health authorities, health information technology innovators, health care providers, and most importantly, the public.

Despite this, the capacity to efficiently share health information between digital charting systems is not the norm in Alberta, nor Canada. Although there have been some advances in Alberta in recent years, the interoperability of health information between primary care services (like a family practice office) and other members of a patient’s health care team, is largely absent. A 2020 consultants’ report commissioned by the government of Alberta noted, the province “does not have an integrated EMR strategy to promote interoperability across the primary care sector” and cited the need for “changes to legislation and policy” to support data integration.²

In Alberta, there is currently no known legislative plan to address this lack of health information integration, and there are currently no enforceable health data interoperability standards or regulations. This stands in contrast to the province of Ontario, which has enacted legislation to define standards and requirements for interoperability³, and nations such as Denmark that initiated a comprehensive approach to health information interoperability 29 years ago and today enjoys a high level of health data integration⁴, and the United States which introduced a program to enforce health information interoperability 19 years ago.⁵

To appreciate why Alberta and Canada lag many nations in the effort to achieve health information interoperability, it is helpful to understand what is required to achieve the capacity to effectively and

² Ernst & Young , Review of Connect Care, Alberta Netcare and MyHealth Records , 2020, (<https://open.alberta.ca/dataset/1394ebca-9869-40d6-b5af-3c6870557f21/resource/d9558cbb-220e-4b28-a05e-3d9773d4d9ac/download/health-review-of-connect-care-alberta-netcare-myhealth-records-2020-03.pdf>)

³ Ontario Health, Digital Health Information Exchange Standard, 2022, (<https://www.ontariohealth.ca/system-planning/digital-standards/digital-health-information-exchange>)

⁴ Mu-Hsing Kuo, et al., A Comparison of National Health Data Interoperability Approaches in Taiwan, Denmark, and Canada, 2021, (https://dspace.library.uvic.ca/bitstream/handle/1828/6387/Kuo_Mu-Hsing_EH_2011.pdf?sequence=1&isAllowed=y)

⁵ U.S. Government Publishing Office, Executive Order 13335—Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator, 2004, (<https://www.govinfo.gov/content/pkg/WCPD-2004-05-03/pdf/WCPD-2004-05-03-Pg702.pdf>)

safely exchange health information between health services and digital charting systems. There are two categories of factors that impact health information interoperability; factors related to technology, and factors arising from how members of the health workforce relate and behave (human factors) around the use and sharing of health information. Technical factors involve the setting of standards so that two different digital charting systems can move health information (like blood pressure measurements, or medication lists) from one chart to another in a form that is consistent and recognizable at both ends. Human factors include the legislation, policy, and culture that society has adopted to define acceptable practices for the use and sharing of health information. Taken together, the state of these technical and human factors determine the level of function of health information interoperability.

FIGURE 1: RELATIONSHIP BETWEEN HEALTH INFORMATION, QUALITY CARE AND POTENTIAL HARM FROM POOR INFORMATION DESIGN AND USE.



An analysis of the Alberta health care system demonstrates significant deficits in both human and technical factor interoperability. Most notable are:

- There is no clear authority accountable for health information interoperability.
- Current health information legislation impairs health information interoperability.
- There is no legislation that mandates technical interoperability standards.
- There is an absence of health data technology regulation around interoperability.
- There is a poor understanding about the importance of interoperability on the part of the health workforce, leadership, and the public.
- There is incomplete internet connectivity, which impairs health information sharing.
- There is a lack of adherence to the *Canada Health Act* principles of portability and universality as they apply to the sharing of patient information.

Taken together these factors significantly hamper Alberta's ability to achieve health information interoperability and promote unsafe care.

Based on our analysis we concluded the following:

- Comprehensive health information interoperability will improve patient safety.
- Comprehensive health information interoperability will improve the ability of health professionals and patient care teams to safely do their jobs.
- Comprehensive health information interoperability will improve the health and wellbeing of Albertans and Canadians.
- Health information interoperability should be a priority and should be *mandated and regulated* both in Alberta and Canada.
- Investment in comprehensive health information interoperability is justified in Alberta, both on a system basis, and independently for individual stakeholders across the health sector including government, the health authority, health information technology innovators, health care providers, and the public.
- Cooperation across stakeholders around a set of evidence-based standards is the best approach to a health information interoperability strategy.
- Public and Indigenous representation must be included at all levels of any health information interoperability strategy.
- This strategy should harness the substantive health information interoperability resources Canada has to offer.
- Pan-Canadian partnerships are encouraged, as directed by the *Canada Health Act* and the principles of *portability and universality*.

Based on these conclusions, the core recommendations of the Working Group are:

- Health data interoperability in Alberta should be mandated through legislation.
- The oversight of health data interoperability design and management in Alberta must include meaningful public and Indigenous representation.
- Health data interoperability oversight should be public-facing, accountable, and fully transparent.
- The design and management of health data interoperability should not be hampered by the agenda of any given organization or interest group, nor subject to the limitations imposed by electoral or capital funding cycles.
- Alberta should endorse and adopt the *Health Data Charter*⁶ as a guiding framework for all provincial health data design and management, including health data interoperability.
- The adoption of health data interoperability in Alberta should align with national efforts.
- All Albertans should have comprehensive internet connectivity to ensure equitable virtual health care access.

For the complete set of report recommendation, please see: www.albertavirtualcare.org

⁶ Canadian College of Health Information Management, Health Data Charter, 2022, (<https://cchim.ca/wp-content/uploads/2022/11/Health-Data-Charter.pdf>)