

OPTIMIZING VIRTUAL CARE IN ALBERTA

RECOMMENDATIONS FROM THE
ALBERTA VIRTUAL CARE WORKING GROUP



SHENZHEN

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FOREWORD

Although the opportunity to meaningfully deploy virtual care goes back decades, until the COVID-19 pandemic, virtual care services were unavailable to most Canadians. The rapid shift to virtualization during the pandemic illustrated both the value of virtual care, and shortfalls in the capacity of the healthcare system to provide it.

The Alberta Virtual Care Working Group (Working Group) was conceived prior to the COVID-19 pandemic, with a mandate to consider policy obstacles to optimized virtual care. The Working Group arose from a shared commitment, and under the authority of all cooperating members to set a consensus policy framework for virtual care in Alberta. Membership in the Working Group was intentionally broad, including government, regulators, health authorities, professional associations, and Indigenous and patient representation. The College of Physicians & Surgeons of Alberta volunteered to provide administrative support.

Optimal virtual care demands a focus on patient-centric team-based care. The patients' circle of care should define the virtual care team, not any given professional group or health service. To effectively share health information between family, caregivers and multiple health providers under differing payment plans, policies, regulatory standards, locations and legislation will require a deep level of policy, technical and workflow alignment.

This report is important because it proposes a means to achieve policy alignment as a foundational element of optimized virtual care, and calls for the meaningful inclusion of patient and Indigenous representation in active system co-design. At heart, *Optimizing Virtual Care in Alberta* is a call for the re-imagining of digital health planning as a patient-centric collaborative process that upholds the premise that quality of patient care will be better served if health sector stakeholders actively cooperate in virtual care design.

We would like to commend the members of the Working Group for their diligent effort and commitment to consensus-based co-design.

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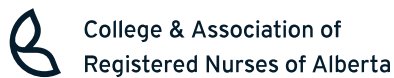
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The College of Physicians & Surgeons of Alberta provided administrative and research capacity to support this work.

The Working Group collaborated with the Federal-Provincial-Territorial Virtual Care Equity Task Team to establish the definitions and taxonomy used in this report.

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EXECUTIVE SUMMARY

The Alberta Virtual Care Working Group is a consensus working group that was cooperatively constituted by its membership to:

- Draft a high-level policy framework for Alberta virtual care design, based on principles of quality care; and
- Propose a roadmap of priority action items needed to deliver upon the identified Design Principles.

The Working Group existed under the authority of cooperating members, and operated on the premise that design of virtual care services in Alberta is better accomplished collaboratively to promote an integrated approach to workflow, policy and technology. By design, the Working Group had a broad and inclusive membership that included government, health authorities, professionals, regulators, and Indigenous and patient representation.

The Working Group's definition of virtual care was:

"Any interaction between patients and/or members of their circle of care occurring remotely, using any form of communication or information technology with the aim of facilitating or maximizing the quality of patient care."¹

As the purpose of health care is the delivery of quality care to patients, it follows that virtual care Design Principles should be established that support this purpose. Using an iterative co-design approach, virtual care Design Principles were drafted, based on characteristics of an idealized virtual care system. The Design Principles aimed to dictate clear parameters for virtual care that, taken together, form a collective vision for an optimized virtual care system. The expectation is that if ratified by all system stakeholders, these Principles can serve as a unifying blueprint for aligning enterprise virtual care policy and workflow.

In reviewing existing barriers to optimized virtual care, the Working Group agreed that shortfalls in policy alignment pose a significant risk to the delivery of integrated virtual care in Alberta. Without a unified policy approach across system stakeholders, the requisite exchange of information between members of the patient's circle of care that is foundational to virtual care will be difficult to achieve, threatening the delivery of quality care. Policy and workflow integration must go hand in hand with technical integration to support optimized virtual care.

The virtual care Design Principles proposed by the Working Group were organized into six domains:

- | | |
|--|-------------------------------------|
| 1. Strategy, policy, and governance | 4. Integration |
| 2. Patient safety | 5. Monitoring and evaluation |
| 3. Patient-centred care | 6. Technology |

Within each domain, high-level principles of system design were articulated that can guide health service stakeholders in the development of integrated virtual care policy and workflow.

To benefit from the shared Design Principles, the Working Group felt that a process to enshrine long-term co-design and policy alignment across stakeholders was key to achieving integrated virtual care in Alberta. To achieve this, a novel participatory and consensus-based oversight structure, the Virtual Care Coordinating Body, was proposed.

The purpose of the Virtual Care Coordinating Body is twofold:

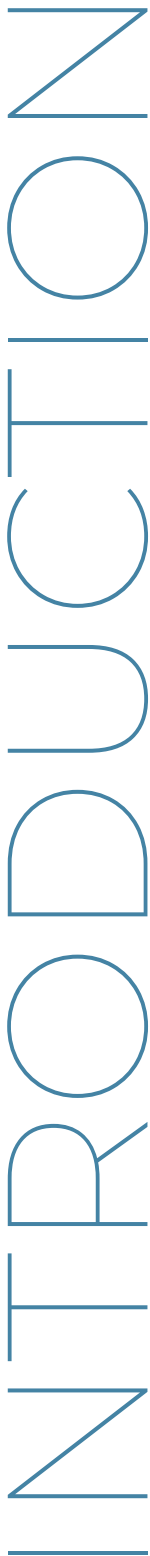
1. Ensure **cooperative compliance** of stakeholders to virtual care system Design Principles (the vision); and
2. **Coordinate projects and share learnings** to promote system improvement in collaboration with system stakeholders.

Working Group members emphasized the importance of including meaningful patient and Indigenous representation on the Virtual Care Coordinating Body. There was consensus that the timeline to achieve an optimized virtual care system would surpass that of a standard government mandate, requiring a commitment to long-term co-design and collaboration at the level of the Virtual Care Coordinating Body.

Further, it is proposed that the Virtual Care Coordinating Body has the following properties:

- It is integrated within the provincial eHealth governance structure;
- Its efforts align with the provincial eHealth strategy;
- It is consensus-driving and defined by a ratified Terms of Reference; and
- The membership on the Virtual Care Coordinating Body should include representation from:
 - Government;
 - Health authorities;
 - Patients and patient-led organizations;
 - Indigenous peoples;
 - Professional health regulators;
 - Professional associations;
 - Health educators; and
 - Other potential stakeholders as identified by the Virtual Care Coordinating Body (e.g. private sector vendors, researchers, etc.).

Lastly, it was posited by the Working Group that if this cooperative model of digital health oversight is deemed successful for virtual care, then consideration should be given to expanding the model to all digital health services.



Alberta Virtual Care Working Group

In early 2020, a consensus committee of health system stakeholders was established* to examine and recommend actions to optimize provincial virtual healthcare services through a cooperative policy framework. The creation of the Alberta Virtual Care Working Group arose from a recognition that without system-wide co-design and policy alignment, fragmentation of virtual care services may continue to compromise patient care.

The Working Group aimed to strike a balance between broad stakeholder representation and nimble committee function. Key stakeholders included patients, Indigenous representation, government, health authorities, professional associations, and professional regulators. Stakeholder appointees to the Working Group were selected by participating organizations or based on subject matter expertise (i.e., Indigenous and patient representation). The Working Group operated by a terms of reference drafted and ratified by committee. It is believed that this model of consensus-driven jurisdictional health policy co-design undertaken by the Working Group is a novel process without significant precedent in Canada.

Membership

The membership of the Working Group was comprised of 1-2 members from each of the collaborating constituencies and organizations. In alphabetical order, Working Group membership was (number of individuals in brackets):

- Alberta College of Pharmacy (1)
- Alberta Federation of Regulated Health Professions (2)
- Alberta Health (2)
- Alberta Health Services (2)
- Alberta Medical Association (2)
- Alberta Pharmacists' Association (1)
- College and Association of Registered Nurses of Alberta (2)
- College of Physicians & Surgeons of Alberta (1)
- Indigenous representative (1)
- Patient representatives (2)

*The Alberta Virtual Care Working Group was established as a cooperative effort by participating groups and organizations, under the authority of the collective.

Project Mandate

The mandate of the Working Group, as defined by the terms of reference, was to:

- Draft a high-level policy framework (Design Principles) for virtual care in Alberta based on principles of quality care; and
- Propose a roadmap of priority action items needed to deliver upon the identified Design Principles.

The following caveats were agreed upon by the Working Group:

- The project work would be agnostic to specific technology vendors; and
- The product of the Working Group would not be binding for any of the sponsoring organizations or constituencies.

It was also agreed that the efforts of the Working Group should align with and inform the eHealth strategic policy framework that was concurrently being drafted by Alberta Health.

Project Scope

Based on consensus, it was decided that the project would exclude consideration of any issue pertaining to virtual care funding including payment models and operational or management costs. While the Working Group recognized that funding is important when considering the quality of a virtual care system, to preserve the integrity of the Working Group and the capacity to engage in unbiased and open discussions, it was felt by all members that excluding these issues was in the best interest of achieving the mandate. The project scope included virtual care services for all residents of Alberta (whether in or out of province) as well as for non-Albertans that were receiving care in-province. Further, it was limited to health services that are delivered virtually with the understanding that these are simply a component or subset of all care.

Quality Framework

The purpose of health service is to provide quality care. Modalities of care, such as virtualized care services, must be designed to deliver upon this promise. If virtual care is not designed, deployed, and managed according to set principles it can fragment health services, increase costs, and potentially harm patients. To be successful, virtual care policy must center on a shared obligation with all system stakeholders to deliver quality care. Therefore, the Working Group set the benchmark of quality care, using the Health Quality Council of Alberta's six dimensions of healthcare quality² as a framework for excellence in system design, deployment, and management.

HQCA domains of healthcare quality²:

- Acceptability
- Accessibility
- Appropriateness
- Effectiveness
- Efficiency
- Safety

DEFINITIONS & TAXONOMY

Definitions

A lack of definitional rigor, and consensus on the meaning of terms used in digital health, has implications for how programs and policy are developed, measured and evaluated. The Working Group set out to define the terms used in this report as well as their inter-relationship. It is hoped that the definitions help to move the Canadian digital health industry toward a uniform lexicon and taxonomy.

The Working Group's operational definition of **virtual care**¹ was derived from the Women's College Hospital Institute for Health System Solutions and Virtual Care definition:

"Any interaction between patients and/or members of their circle of care occurring remotely, using any form of communication or information technology with the aim of facilitating or maximizing the quality of patient care."

The Working Group adopted the same definition of **digital health**³ as the Health Canada Equity Task Team, which is defined as:

"The use of information technology/electronic communication tools, services, and processes to deliver healthcare services or to facilitate better health."

The Working Group defined a **circle of care** as:

"The group of healthcare providers and caregivers providing care to a patient."

The Working Group defined **digital health equity** as:

"The provision of equitable health service using digital communication or information tools for the collection, exchange and use of health-related information for purposes of promoting quality care."³

The Working Group adopted the Organization for Economic Co-operation and Development's (OECD) definition of **digital divide**⁴, which refers to:

"The gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard to both their opportunities to access information and communication technologies and to their use of the Internet for a wide variety of activities."

Virtual Care as a Component of all Care

To craft a quality-based virtual care design framework, the place of virtual care within the healthcare ecosystem must be defined. Committee consensus was that virtual care is:

“A modality of all health care that uses information and communication technologies to enable health service to be employed when clinically appropriate to promote quality care.”

This relationship frames the function of virtual care as a modality or subset of care, not a distinct or parallel health service. Further, Working Group members expressed the importance of acknowledging that many of the shortfalls ascribed to virtual care in this report may apply equally to health care in general. The focus of this report on virtual care should not distract from broader health service quality improvements.

Virtual Care as a Component of Digital Health

Virtual care involves the secure exchange of health information between locations; it does not include all features of digital health. Although analytics, clinical decision support, machine learning, artificial intelligence, and digital monitoring technologies are components of digital health and can be supported by or support virtual care, they are not by definition virtual care.

The Working Group proposed that:

“Virtual Digital Health is a subset of digital health that involves the use of information technology or electronic communication tools, services, and processes to facilitate communication and the exchange of health information between remote locations.”



CONTEXT

A Changing Healthcare System

The healthcare industry is dependent on the generation and consumption of information for its daily function. Digitization has changed how health information is collected, stored, analyzed and shared, and how care can be provided.

Optimized virtual care requires the ability for members of a patient's circle of care to be able to readily communicate and exchange information for the purposes of care. As a patients' health needs evolve over time, so too will the members of their circle of care. Therefore, to be effective, the exchange of health information for the purposes of virtual care must adapt to the varying needs of the patient.

To achieve this optimized virtual care state, interoperable or integrated virtual care technology alone will not suffice; cooperative and aligned governance, policy, workflow, education, and strategic direction are required across system stakeholders to support virtual care technology.⁵ Achieving this level of integration "requires co-designing long-term solutions with patients, building trust among providers, and working with governments to establish sensible policies that will ensure the sustainable use of virtual care"⁶, and ultimately establishing integrated information workflow across policy, providers, and health services.

If implemented properly, virtual care has the capacity to align with and support the quadruple aim,⁷ namely: optimize patients' experience with care, promote population health, reduce per capita healthcare costs, and improve healthcare worker experience. However, without defined and standardized design parameters that support quality care, virtual care can be deployed haphazardly, sometimes inappropriately, and in a manner that may not support the best interests of the patient, provider, or health system. Thoughtful, evidence-based principles of virtual care design are needed and should be developed through cooperative co-design with system stakeholders - especially patients - to achieve requisite health information integration.

Virtual Care in Canada

Although Canada was considered an early pioneer in virtual care, in recent years national rates of virtual care have lagged behind other nations⁸, despite surveys that demonstrated consumer demand.^{9,10} The slow uptake of virtual care has been ascribed to policy obstacles such as a lack of remuneration codes and portable licensure, fragmented technology, a disinterested and poorly trained workforce, and upfront costs associated with adoption.¹¹⁻¹³

In February 2020, the Canadian Medical Association Virtual Care Task Force published a set of recommendations for scaling up virtual care practice in Canada.⁸ The report identified policy obstacles as key barriers to successful virtual care deployment, among them were

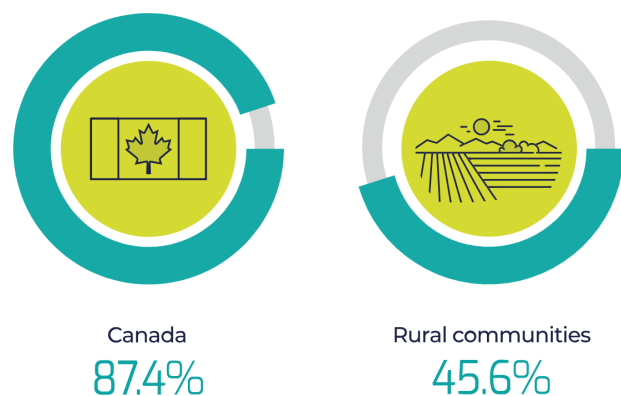
healthcare governance, physician licensure, payment models, and shortfalls in medical education. This was echoed in a 2020 report by the Auditor General of Ontario which identified policy shortfalls in the oversight and planning of virtual care in Ontario, stating that the “Ministry of Health lacked effective strategies, systems and procedures, long-term goals and targets needed to offer and manage patient-focused virtual-care services.”¹⁴ The findings of the Auditor General of Ontario mirror the state of virtual care planning in many jurisdictions in Canada; while tools and guidelines have existed that support the adoption and operationalization of practice-level virtual care^{8,15} (e.g. navigation guide for patients)¹⁶ system-level guidance outlining how to design and integrate virtual care services within an existing healthcare system have been lacking. This shortfall is a hindrance as the success of virtual care integration depends on how people, processes, and technologies intersect,¹⁷ how change is guided and supported,¹⁸ as well as the decisions of leadership to change practice among clinic teams.¹⁹

A substantive change in the Canadian healthcare industry is the prominent role now played by private sector technology vendors that process and often control health information. A relative absence of enforced data integration standards for software vendors in the Canadian health sector has potential negative implications for interoperability, data stewardship and patient safety in the context of virtual care.

Virtual care provider literacy was identified in the 2020 CMA Virtual Care Task Force report as an important determinant of safe and effective virtual care service. Shortfalls in virtual care literacy in the healthcare workforce can negatively impact virtual care clinical services, strategic planning, administrative oversight, and policy development. In 2020, the Association of Faculties of Medicine of Canada struck a task force on virtual clinical medical education to develop a curriculum matrix for teaching about virtual care*, and in 2021 the Medical Council of Canada, which awards a licentiate, one of the requirements for licensure of Canadian physicians, began developing an objective for physician digital health competency.**

Patient digital health literacy is also an obstacle to virtualization; in a recent study, 60% of surveyed Canadians lack adequate digital health literacy skills to participate fully in virtual care.²⁰ This shortfall is more evident among individuals who are members of underserved populations,²¹ meaning those who are subject to the negative impacts of social determinants of health. Nearly a quarter of Canadians, principally those in remote rural and northern regions, comprised of a disproportionate number of Indigenous peoples, do not have access to high-speed Internet.²⁰ The virtualization of care, if not deployed in support of principles of health equity, can exacerbate the digital divide.

Broadband at 50/10 Mbps, unlimited



Canadian Radio-television and Telecommunications Commission

*Personal communication, Genevieve Moineau, 2021

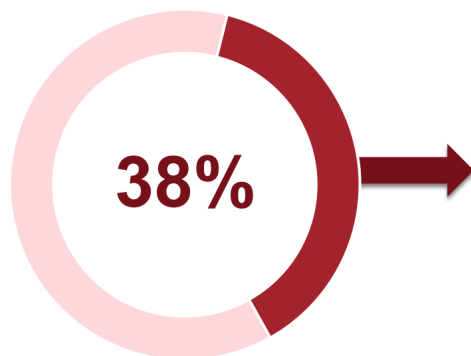
**Personal communication, Deborah Pugh, 2021

The COVID-19 pandemic in March 2020 prompted a sudden and unprecedented shift to virtual health care across Canada, and the world. Rates of virtual care rose from 10-20% in 2019 to 60% of all health care visits across provider categories in April 2020, falling back to 40% of all visits in 2021.²² During the pandemic, the vast majority of virtual care in Canada has been provided by phone;²² an integrated, easy to use, and reliable pre-digital technology. More limited use of secure messaging, remote monitoring and video speaks to the relative immaturity of post-digital platforms in many jurisdictions in Canada. Despite this lack of preparedness, the value of virtual care, not only as a means to limit disease spread, but as a core modality of care has become evident, leading to the conclusion that it is “here to stay”.¹¹

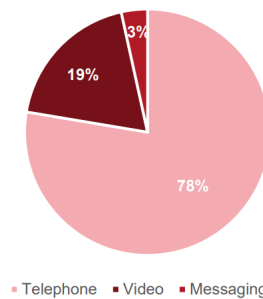
Modality of Most Recent Visit (all visits)



Total virtual care for all patient reported visits
January - April 2021 (pooled data, N=4,890)



Virtual care modality
January - April 2021 (pooled data, N=1,826)



4

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Sources: COVID-19 Tracking Survey, Canada Health Infoway and Leger, 2020 & 2021
Base: Respondents who had a health encounter with the health system in the month preceding the survey.

Canada Health **Infoway**
Inforoute Santé du Canada

COVID-19 has spawned an extensive interest by the Canadian health industry in all things virtual. Regional and national organizations, too numerous to list, have initiated virtual care projects, including the Federal government which in May 2020 committed \$240.5 million dollars²³ to accelerate the deployment of virtual care services in Canada. This funding was earmarked to support efforts by Health Canada’s Federal-Provincial-Territorial Virtual Care Table to promote three streams of work:

- The promotion of investment in virtual care technology and infrastructure;
- The evaluation of the impact of virtual care; and
- The establishment of policy supports for virtual care.

Virtual Care in Alberta

The province of Alberta has long been recognized as a Canadian leader in digital health.²⁴ The provincial Electronic Health Record, Netcare, was an early exemplar of a jurisdictional cloud-based patient results repository that permits virtualized viewing of select patient information.²⁵ In 2019, the MyHealth Records patient portal launched, permitting Albertan residents to virtually view select personal health information housed in Netcare.²⁶ The scope of information available to Albertans through the MyHealth Records portal has been increased and by the summer of 2021 will include nearly all laboratory results.²⁷

The Connect Care initiative was launched in November 2019, and is now midway through a deployment that will unite all Alberta Health Service's staff in a fully integrated patient-centered charting system that boasts robust virtual care capacity including intrinsic secure messaging, a patient portal, and integrated videoconferencing.²⁸ Connect Care is the largest integrated health information initiative in Canada, and when fully deployed, 30% of all health services in Alberta will fall under its purview. Connect Care uses the same digital platform as Kaiser Permanente,^{29,30} a world leader in virtual care services, and the Connect Care ecosystem provides an excellent opportunity to test and refine virtual care practices in Alberta.

Most community-based health services, comprised of primary care clinics and private sector providers including pharmacy, rehabilitation, and mental health services are outside the Connect Care health information ecosystem and lack data integration with each other. There are over 10 unique community-based electronic medical records (EMR) in use in Alberta,⁵ most which lack the ability to exchange patient data digitally. The Alberta Community Integration Initiative / Central Patient Attachment Registry (CII/CPAR) aims to bridge this gap by collecting patient data from physician offices and other community-based clinics and making it available to other healthcare providers through Alberta Netcare.³¹ CII will not include patient data from independent private sector health services (rehabilitation, mental health, pharmacy, etc.), illustrating the disconnect of health information across potential members of a patient's circle of care.



Other efforts to integrate health data in Alberta include PrescribeIT - a national e-prescribing tool in early phases of deployment in Alberta that enables prescribers to transmit a prescription electronically between a prescriber's EMR and the pharmacy management system (PMS) of a patient's pharmacy of choice.³² Although prescribing remains principally paper and fax dependent, provincial lab information systems are well integrated across the province with most digital patient charting platforms. Efforts are also currently underway to develop an enterprise digital referral and electronic consultation interface, as currently²⁴ this practice is fragmented and inconsistent across the system.

Although a variety of community-based digital charts have patient portals, only some provider offices choose to use their portal to communicate with patients, or afford patients access to their chart information. There is also inconsistent use of third-party secure messaging software that can broker communication and transfer documents between providers and patients on different platforms. The degree of information fragmentation of community-based health information results in services that are heavily reliant on the use of fax-based information transmission.

The fragmentation of virtual care services may arise in part from the fact that there are no provincial design standards for virtual care systems in Alberta, nor to our knowledge in any other jurisdiction in Canada. Design standards are a set of clear principles or provincial regulatory standards to which all virtual care initiatives must align to ensure quality health service. The regulation that currently exist is restricted to considerations of the privacy and security of health information.⁸ Consequently, a Privacy Impact Assessment for a virtual care deployment that is accepted by the Office of the Information Privacy Commissioner only considers the requirements of the *Health Information Act* with respect to protecting patient privacy, meaning that a deployment can proceed without any review of continuity of care, safety, equity, efficiency, or data and technical interoperability of the proposed solution. The byproduct of this lack of system standards is fragmentation of health information, which can adversely impact the provision of quality virtual patient care.

In Alberta, there are twenty-nine regulated health professions, who develop regulatory standards to ensure the provision of quality patient care. These regulators are accountable for the competency of the profession they regulate and for upholding the obligation of their regulated professionals to choose safe technologies and ensure that it has a positive impact on patient wellbeing. However, as digital health technology evaluation is not a traditional function of professional health regulators or health professionals,³³ there are arguably limitations of capacity and knowledge in their ability to adjudicate the quality of virtual care technology, or the ability of this technology to safely integrate with technologies used by other health professionals or sectors in the healthcare system, resulting in a regulatory grey zone. With the increasing use of digital health technology, professional regulators must determine where and when virtual care specific standards are required or must evolve to accommodate new modes of digital practice. Even if a standard is up to date, there is currently no formal means in Alberta for professional regulators to harmonize professional standards to assure that team-based virtual care can occur safely and seamlessly.

Social determinants of health such as education, income, age, gender, race and culture impact the equity of health service.³⁴ There are segments of the Alberta population that lack access to high speed internet, digital health technology, or digital literacy and consequently are less likely to engage with virtual care; the elderly, immigrants, northern, remote or Indigenous peoples living in Alberta are far more likely to be impacted by these issues. It is our understanding that there are currently no comprehensive provincial programs to address patient digital literacy or mitigate the digital divide.

In 2017, the Auditor General of Alberta found there is “a lack of clear accountability for information technology; a lack of data on quality and cost of care; a lack of data on community services; and fragmentation of data geographically across the province and functionally between hospitals, community settings, physicians, AHS and the health department.”⁵ Although progress has been made toward the integration of health information technologies since this report was released, issues persist. A March 2020 government-commissioned report by Ernst and Young that reviewed Connect Care, Alberta Netcare, and MyHealth Records, stated that health informatics oversight decision-making in Alberta “has tended to focus on operational and tactical issues rather than strategic decisions impacting the digital health ecosystem.”²⁴

"We have also considered the role of patients and their families. Leading organizations around the world recognize that engaging and empowering patients to take an active and responsible role in their own care is essential to sustainable healthcare systems."

- Auditor General of Alberta, 2017

The report goes on to recommend that:

- A stronger governance model should be put in place to agree on key decisions, priorities, and roles and responsibilities system-wide;
- An integrated overarching eHealth strategy is fundamental in achieving an integrated digital health ecosystem; and
- Decisions should not be made in isolation.

There has been substantive effort in Alberta to craft strategic plans aimed at integrating and optimizing provincial health services. As of 2017, the Auditor General suggests these plans have largely failed to achieve their intended purpose because strategies were largely top driven, did not have the full buy-in of providers, and leadership changed prompting disruptive shifts in strategic focus.⁵

PROJECT METHOD

Process

The process used by the Working Group was carefully considered to maximize the co-creation of project deliverables and extend the capacity of busy committee members. The main tools used to conduct the work were meetings and surveys (online questionnaire and video interviews), supplemented by serial group consultation aimed at achieving consensus.

Meetings

The Working Group met monthly via videoconference between June 2020 and June 2021. The first two meetings were used to orient committee members and to ratify the project terms of reference. Subsequent meetings were used to review content arising from group surveys and establish project consensus and direction.

Surveys

Surveys were used to leverage the expertise and knowledge of Working Group members to guide project deliverables. In total, five surveys were conducted that were answered online as a questionnaire or video interview. Members answered independently by each constituency or stakeholder group and were encouraged to consult with their representative organizations or constituencies prior to submitting responses.

The survey process and the five survey topics were as follows:

01

Ideal Virtual Care Model

Working Group members were asked to define the elements of an idealized and fully mature Alberta virtual care system, imagining there were no constraints in implementing them.

- Responses were reviewed independently by project staff members, anonymized, and consolidated into a summary document.
- To inform the subsequent survey, draft Design Principles were extrapolated from the idealized state responses.
- Results were reviewed by the Working Group during the following meeting and modified based on their feedback.

02

Design Principles

Working Group members were asked to review, comment and agree to the draft Design Principles for an idealized virtual care system.

- Responses were reviewed independently by two project staff members, anonymized and consolidated into a summary document.
- Results were reviewed by the Working Group during the following meeting and modified based on their feedback. Organization-specific follow-up interviews were conducted by the Working Group chair and support staff.

03

Barriers to Optimized Virtual Care

Working Group members were asked to identify barriers to attaining the Design Principles by performing a gap analysis between the idealized virtual care system and current state of virtual care in Alberta.

- Responses were reviewed independently by two project staff members, anonymized and consolidated into a summary document by the chair.
- Results were reviewed by the Working Group during the following meeting and modified based on feedback.

04

Current Maturity Evaluation

Using Digital Health Canada's Virtual Care Maturity Model,³⁶ Working Group members were asked to rate the current maturity of virtual care in Alberta.

05

Pragmatic Recommendations

Considering the findings in surveys 1 – 3, Working Group members were asked to propose pragmatic steps to move toward an optimized virtual care system. This survey was conducted through a live video interview process conducted by the Working Group chair and staff.

- Responses were reviewed independently by two project staff members, anonymized and consolidated into a summary document.
- Results were reviewed by the Working Group during the following meeting and modified based on feedback gathered from the meeting and subsequent document review.

Report

The draft project report was assembled from the constituent findings of the five project surveys completed by Working Group members. After subsequent revisions, the final report was submitted to all parties for final approval.

FINDINGS

01 Idealized Virtual Care Model

When asked to define the elements of an idealized Alberta virtual care system, the responses of committee members demonstrated remarkable alignment; there was broad agreement on most major features of an idealized virtual care system. Only a few key areas prompted divergent responses: governance, oversight and operationalization. A summary of the consensus core characteristics of an idealized virtual care system is listed below in Box 1.

Box 1. Core characteristics of an idealized virtual care system

- There is a unifying vision for virtual care in Alberta based on quality patient outcomes;
- Virtual care is held to the same quality standards as in-person care;
- Patients play a central role in the design and oversight of the virtual care system;
- Virtual care is fully integrated with core in-person health services and is *not* a distinct or parallel service;
- Integrated team-based virtual care occurs seamlessly across circles of care;
- Patients have access to their comprehensive virtual care information;
- Virtual care is practised in a manner that assures patient safety;
- There are regulations that assure virtual care technology complies to standards of data interoperability and safe design;
- There is policy alignment between all stakeholder organizations to support virtual care;
- Patient and provider virtual care literacy is assured through effective education;
- Professional regulation is aligned across professions and upholds virtual care competency;
- Transportable professional licensure exists;
- Virtual care services are monitored and evaluated according to set metrics for the purposes of continuous quality improvement;
- The benchmark for virtual care system design and evaluation is the promotion of quality care;
- Equity of virtual care is assured for all residents of Alberta;
- Virtual care technology is functionally interoperable from a data and workflow perspective, and fully integrated with a functionally single provincial patient chart;
- Virtual care technology is easy to use, accessible and readily supported; and
- The virtual care system is sustainably resourced.

The characteristics of an idealized virtual care system, for which committee consensus did not initially occur, were the interrelated areas of:

- Governance;
- Oversight and accountability; and
- Operationalization.

Committee members provided a spectrum of suggestions for how an idealized virtual care service could be governed and managed. These ranged from centralized government oversight and accountability, to autonomous and patient-lead virtual care oversight committees, to hybridized models.

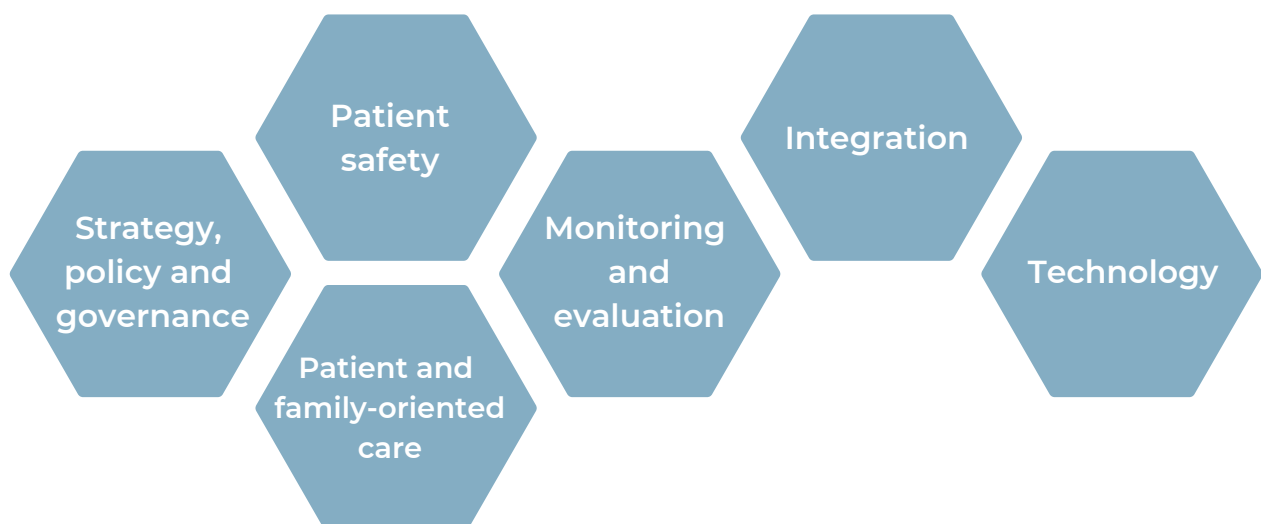
Accountability for, and the operationalization of, the idealized virtual care system was difficult to determine clearly without first establishing a defined governance model.

02 Design Principles

Virtual care Design Principles were drafted based on the agreed characteristics of an idealized virtual care system. They dictate clear parameters for virtual care that, taken together, dictate a collective vision for an optimized virtual care system. The expectation is that if ratified by all system stakeholders, the Principles can serve as a unifying blueprint for enterprise system design and oversight.

The Design Principles changed substantially over the course of their development based on iteration. The Working Group understood that the final Design Principles are aspirational, and demand a standard of virtual care accountability, function and performance that is currently not achieved by general in-person health service. The consensus was that the current state health system shortfalls should not limit aspirational Principles needed to promote excellence in virtual care.

The final virtual care Design Principles were organized into six sections that focus on:



01

There is a **common vision** for Alberta virtual health care

- a. The vision for virtual care is founded upon the ultimate responsibility to provide quality care; meaning acceptable, accessible, appropriate, effective, efficient and safe virtual care.
- b. A collaborative Coordinating Body of representative stakeholders should advise on virtual care system design and high-level direction.
- c. Virtual care design principles should align with and inform the overarching provincial eHealth strategy.
- d. Healthcare standards, policy and legislation, and the virtual care vision should be transparent, in alignment and mutually supportive.
- e. Virtual care design principles should be supported by a nimble strategic approach that is responsive to the complex, dynamic health and technology industries.

02

Virtual care service will be **safe**

- a. The competency of providers to deliver safe virtual patient care should be assured through training, licensure, and regulation.
- b. The capacity of virtual care technology to deliver safe patient care should be assured through standards and monitoring.
- c. Health information available for virtual patient care should be comprehensive and accessible to providers on a need-to-know basis as permitted by privacy standards.
- d. Personal health information used in virtual care should be private and secure.

03

Virtual care will be **patient and family-oriented**

- a. Patients and family should be recognized and treated as central members of virtual healthcare teams.
- b. Patients should have meaningful representation at all oversight levels of provincial virtual care.
- c. Health information flow and retention should be designed to follow the patient through their entire health journey.
- d. Patients, as information owners, should have access to their complete and composite health information.
- e. Patients and their family should have training and knowledge resources to promote virtual care literacy.
- f. Equitable access to virtual care services and resources should be a long-term goal.

*Consistent with the mandate of the Working Group, financial and resource considerations are outside the scope of these Principles.

04

Virtual health care will be **integrated** at all levels of health service provision

- a. Virtual healthcare service should enhance continuity by integrating with, and functioning as an option to core in-person health services.
- b. Virtual care should support bidirectional communication between any two or more members of a patient's circle of care.
- c. Virtual care user support and training should be standardized and integrated across services.
- d. Virtual care technology should be interoperable and functionally integrated.
- e. Virtual care technology and information workflow should support and promote team-based care.
- f. All members of a circle of care should be trained to provide collaborative virtual care over distance and time.
- g. Interjurisdictional virtual care for Albertans should be integrated with Alberta-based services.

05

Virtual care will support ongoing **monitoring and evaluation**

- a. Data and experience gathered through the provision and management of virtual care should be used for the purposes of continuous quality improvement.
- b. The evaluation and oversight of virtual care services should be transparent to appropriate stakeholders, including patients, and subject to regular reporting requirements.

06

Virtual care **technology** will foster quality health service

- a. Virtual care technology should be designed to decrease workflow complexity and promote ease of use for providers and patients.
- b. Virtual care technology procurement should be transparent and follow set standards that uphold quality care and fairness, and promote innovation.
- c. Virtual care system design should drive technology requirements.
- d. Virtual care Design Principles should be vendor agnostic.

03 Barriers to Optimized Virtual Care

Once agreement was reached on the Design Principles for an optimized virtual care system, Working Group members were asked to reflect on the barriers and challenges that currently exist in Alberta that prevent the achievement of excellence in virtual care. The most frequently cited barriers were a lack of a common vision, poorly integrated technology, poor policy alignment and knowledge deficits. Overall, the barriers speak to a fragmented virtual care environment lacking in policy alignment and systematic or strategic coordination.

A summary of the perceived barriers is found in Box 2. Similar to the Design Principles, fiscal or payment considerations were not addressed to align with the Terms of Reference.

Box 2. Summary of Perceived Barriers to Optimal Virtual Care Delivery

- There is no clearly stated, understood, or communicated provincial-level vision for virtual care;
- There is no provincial virtual care oversight committee with meaningful representation at all levels to ensure an optimally functioning virtual care system that aligns with a provincial virtual care strategy;
- There are many stakeholders in virtual care that have different expectations, priorities, capacities, needs, and perspectives;
- There is limited involvement of patients in the oversight of virtual care;
- There are no provincial or industry standards of excellence to ensure that virtual care is delivered in an acceptable, accessible, appropriate, effective and safe manner;
- Virtual care information is not integrated, nor interoperable, across healthcare providers;
- The evaluation of virtual care systems and tools is insufficient or non-existent;
- Patients are not treated as information owners who have access to their complete and composite virtual care information;
- Virtual care training and education, for providers, clinic staff, patients and family members is insufficient;
- Not all providers or patients have equitable access to technology required for virtual care;
- There are no norms or expectations in place to govern how a healthcare team works in a distributed virtual care environment;
- The provision of virtual care to Albertans outside the jurisdiction is inhibited by licensure, technical and policy impediments;
- The current system is not optimally designed for all users of virtual care, which contributes to provider burnout;
- There is limited integration of virtual care services between different health organizations in both the public and private healthcare sector (i.e., Alberta Health Services, primary care, and private care services);
- There are broad knowledge gaps in the appropriateness of virtual care that require both assessment and appropriate education and training;
- The COVID-19 pandemic accelerated the adoption of virtual care too rapidly and the system was not ready; and
- Some information systems only have unidirectional communication, preventing bidirectional communication between providers, or providers and patients.

An analysis of the barrier survey responses and discussions that followed with Working Group members led to the following insights:

- **Coordination of effort**

Alberta is suffering from a lack of coordinated virtual care oversight across stakeholders. The absence of a coordinated and consensual vision-based approach to virtual care system design and management is promoting system fragmentation and compromising patient care.

- **Unifying vision**

There is an absence of a unifying vision for standard or principle-based quality virtual care in Alberta. Without defining clear design standards, stakeholder efforts to virtualize services will remain fragmented in terms of policy, workflow and technology.

- **Stakeholder Engagement**

Not all relevant stakeholders are meaningfully and equitably engaged in virtual care design and oversight in Alberta. This may arise from both a lack of representation at decision making tables and ineffective means to engage a more diverse constituency. Principle among those underrepresented are patients, Indigenous peoples and private sector health service providers.

- **Timeline**

In 2017, the Auditor General of Alberta raised the concern that provincial electoral and government capital funding cycles disrupt digital health projects. Working Group members concurred that a lack of long-term commitment to a clear principle-based vision will disrupt the capacity of Alberta to move toward optimized virtual care.

04 Current State Evaluation

To establish a benchmark for the current state of virtual care in Alberta, the Working Group used Digital Health Canada’s virtual care Maturity Model Framework.³⁵ The framework sets maturity criteria for the following six domains according to three performance categories: Basic, Emerging and Advanced (Figure 1).

- User experience, change management, and adoption for patients and providers
- Technology, interoperability and standards
- Leadership and governance
- Care models / delivery and sustainability
- Legislation and policy
- Benefits realization

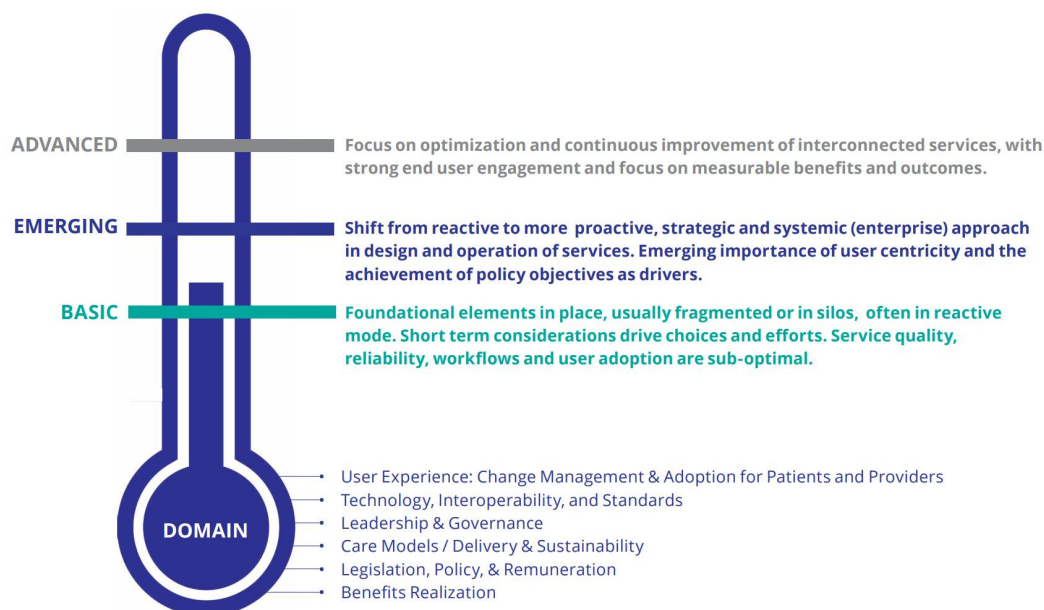


Figure 1. Digital Health Canada’s virtual care Maturity Model Framework

Using the framework, committee members were asked to grade the current state of virtual care in Alberta. Responses were collated and an overall grade assigned for each category. With only a few exceptions, committee members graded virtual care maturity in Alberta as being at the basic level (Figure 2).

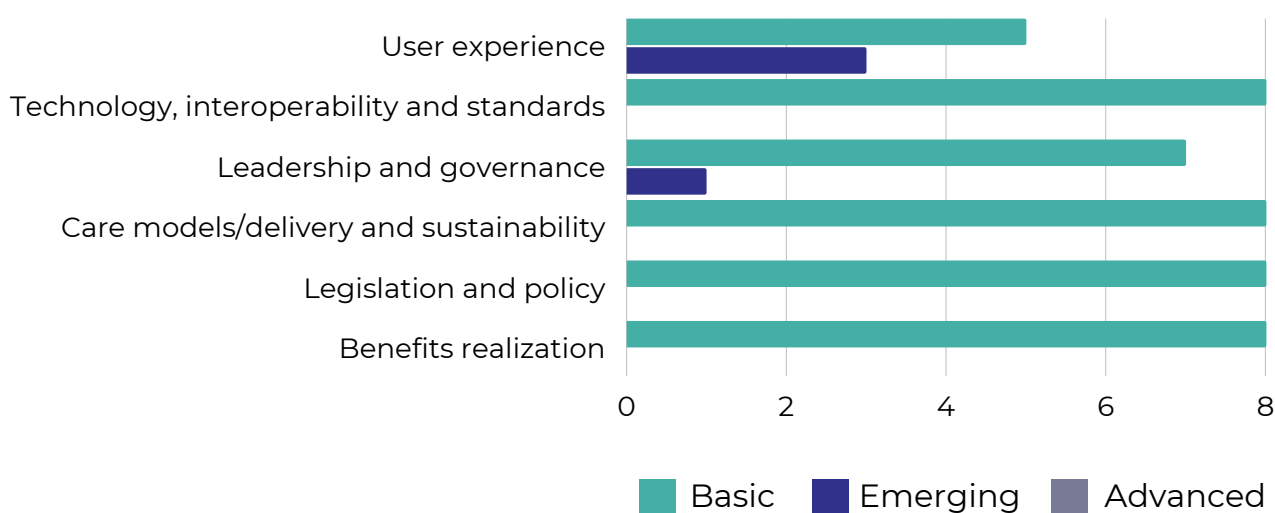


Figure 2. Maturity level ranking across the model's six domains, as assessed by working group members.

05 Recommendations

The Working Group members universally supported that cooperative coordination of provincial virtual care policy and workflow is required to optimize services in Alberta. To accomplish this, a shared vision is needed to unite stakeholders in this common effort. Working Group members emphasized the importance of the inclusion of meaningful patient and Indigenous representation in this co-design process. Further, there was consensus that the timeline to achieve an optimized virtual care system would surpass that of a standard government mandate, requiring commitment to long-term co-design and collaboration by participating stakeholders.

Working Group members felt there is no existing committee or oversight body in Alberta that could fulfill the oversight requirements set out by the Working Group. Therefore, a novel participatory and consensus-based oversight structure is proposed, that if supported by all system stakeholders should be of unifying benefit. The fundamental purpose of this body is twofold:

1. Ensure **cooperative compliance** of stakeholders to the virtual care system Design Principles (the vision); and
2. **Coordinate projects** and **share learnings** to promote system improvement in collaboration with system stakeholders.

Lastly, it was posited by the Working Group membership that if this cooperative model of digital health oversight is deemed successful for virtual care services, then consideration should be given to expanding the mandate to all digital health services.

Based on Working Group deliberations of project surveys, the consideration of historical and current state virtual care in Alberta, and best practice in virtual care policy and oversight, the following recommendations were drafted to achieve the proposed Design Principles.

01 Recommendation: Coordination

- a. Create a collaborative, representative, multi-stakeholder Virtual Care Coordinating Body that is responsible for:
 - Upholding a common and agreed upon principle-based vision for virtual care; and
 - Coordinating, across stakeholders, activities aimed at delivering this vision.
- b. Recognize and integrate the Virtual Care Coordinating Body within the provincial eHealth governance structure.
- c. The Virtual Care Coordinating Body should serve as a resource for all stakeholder organizations to share and align virtual care initiatives.
- d. The Virtual Care Coordinating Body should collaborate with partners (e.g., subject matter experts, educational institutions, regulators, health authorities, government, patient advocacy groups) to carry out its work.
- e. The Virtual Care Coordinating Body should have the following features:
 - It is defined by a Terms of Reference that is written and endorsed by all member stakeholders;
 - It is consensus driven;
 - It is principle based;
 - It is transparent;
 - It employs virtual communication tools for internal and external communication; and
 - Decisions are evidence-based, where evidence exists.
- f. Consider the principle of Model Law or Model Rule (e.g. centrally standardized system principles with local modification or interpretation based on design need) as a functional model for the Virtual Care Coordinating Body.
- g. Define the membership of the Virtual Care Coordinating Body in the Terms of Reference, and include representation from:
 - Government;
 - Health authorities;
 - Patients / patient-led organizations;
 - Indigenous peoples;
 - Professional health regulators;
 - Professional associations;
 - Health educators; and
 - Other potential stakeholders as identified by the Virtual Care Coordinating Body (e.g. private sector vendors).

02 Recommendation: Patient Representation

- a. The Virtual Care Coordinating Body will have substantive and meaningful patient membership as defined in the Terms of Reference.
- b. The Virtual Care Coordinating Body patient representatives will intentionally:
 - Represent diverse perspectives and groups, including but not limited to Indigenous peoples; and
 - Align when possible with patient organizations and community groups that have trusted and established relationships with citizens from diverse populations.

03 Recommendation: Co-Design

- a. Enshrine as a core value and communicate to all stakeholders the importance of multi-stakeholder cooperation in virtual care oversight and design by the Virtual Care Coordinating Body.
- b. Identify key performance indicators to measure stakeholder cooperation in the context of the Virtual Care Coordinating Body.

04 Recommendation: Digital Health

- a. Consider expanding the scope of the Virtual Care Coordinating Body from virtual care to all digital health services, based on an evaluation of this novel model of cooperative digital health coordination.

05 Recommendation: Design Principles

- a. Leverage the virtual care Design Principles (the common and agreed to vision for virtual care) proposed by the Working Group, in the following manner:
 1. Subject to iterative refinement, based on consultation processes with system stakeholders under the direction of the Virtual Care Coordinating Body, the Design Principles should be ratified as the common and agreed upon vision for virtual care in Alberta.
 2. Once ratified, they serve as the blueprint for a common and agreed to vision for virtual care in Alberta under the direction of the Virtual Care Coordinating Body.
 3. The Principles should be subject to periodic reevaluation based on evidence and industry best practices under the direction of the Virtual Care Coordinating Body.

- b. Use the Design Principles (the common and agreed to vision for virtual care) to form the foundation by which all stakeholders cooperate within a managed Alberta virtual care system.

06 Recommendation: Strategic Vision

- a. Set a long-term strategic vision with an agile, iterative and flexible roadmap and prioritization process, that supports incremental and sustained change over time that includes:
 - Monitoring of the virtual care system using key performance indicators;
 - Iterative team-based planning and decision making;
 - Regular evidence-based prioritization of short-term goals; and
 - Regular evaluation of short and long-term goals, and outcomes.

06 Prospective Projects

The proposed Virtual Care Coordinating Body is a novel governance approach that is purpose-designed to promote cooperative digital health system design and coordination. One of the two core functions of the Virtual Care Coordinating Body is to coordinate projects aimed at promoting system improvement in collaboration with system stakeholders.

As the final deliverable for the project, the Working Group members were asked to identify prospective projects or action items that would help deliver upon the optimized vision for virtual care. The premise is that the Virtual Care Coordinating Body will participate in these projects in collaboration with subject matter experts and existing health system resources.

The prospective projects listed below are substantive; the capacity of the Virtual Care Coordinating Body to engage in the projects will be limited by resources. It is recognized that the projects will need to be prioritized and carried out stepwise and that other pertinent projects will arise from the learnings accrued from this effort.

Potential Virtual Care Coordinating Body Projects (in no particular order)

The Virtual Care Coordinating Body can work with key stakeholders to:

1. Perform a gap analysis to identify system-wide virtual care policy shortfalls and work with system stakeholders to update policies in alignment with the common and agreed upon virtual care vision, as informed by the analysis.
2. Propose a standardized virtual care lexicon for Alberta, in alignment with provincial content and message standards.
3. Conduct an evaluation of the value proposition to Albertans of an integrated and optimized virtual care system.

4. Set a defined standard for the optimized integration of virtual care with in-person care.
5. Set standards for virtual care training and competency at the following levels:
 - Undergraduate education
 - Postgraduate education
 - Continuing professional education
6. Define standards for clinically appropriate virtual care.
7. Establish and align the consideration of virtual care competencies within professional licensure standards.
8. Coordinate the setting of standards (with the Alberta Federation of Regulated Health Professions of Alberta) for virtual care regulation that uphold the common vision for virtual care and are aligned across professions.
9. Develop a plan for provincial virtual care training and knowledge resources for patients and family in coordination with the proposed support and training for healthcare practitioners.
10. Propose standards for virtual care system design and deployment that ensure patient safety.
11. Propose means to evaluate, monitor and report on the safety of virtual care services.
12. Develop a policy framework for comprehensive patient access to virtual care personal health information.
13. Develop a high-level provincial plan for the equitable provision of virtual care, with special attention to social and digital determinants of health.
14. Support the development of a virtual care monitoring and evaluation plan.
15. Set a framework for the sharing of contextualized virtual care performance metrics with patients and family.
16. Set standards for optimized patient circle of care communication.
17. Evaluate if standardized end-user virtual care user support and training offers potential economies of scale and improved system function.
18. Propose a strategy to assure data integration of virtual care technology platforms.
19. Identify strategies for promoting a team-based care approach to virtual care.
20. Examine and identify the obstacles to inter-jurisdictional virtual care that potentially compromise the care of Albertans, and the ability of providers to render service.
21. Establish workflow standards that promote ease of use of virtual care technology.
22. Propose a virtual care procurement framework that is transparent and includes requirements to ensure that platforms are interoperable, user-friendly, and safe, and minimizes barriers to innovation.

CONCLUSION

A key feature of an integrated high-performing healthcare system is that it must be designed around the needs of the patient.⁵ The deployment of virtual care services in Alberta currently does not fulfill the needs of the patient insofar as it does not operate as one system and fragments patient information by health service, although gains have been made in some sectors with the deployment of enterprise solutions like Netcare, MyHealth Records and the Connect Care ecosystem. Yet most members of a patient's circle of care, meaning family, caregivers and the 29 regulated health professions in Alberta (e.g., pharmacists, speech language pathologists, mental health counsellors) often remain excluded from a unified patient-centered health information system. As optimized virtual care by definition involves the *“interaction between patients and/or members of their circle of care occurring remotely, using any form of communication or information technology”*, the exclusion of members of the circle of care from the capacity to exchange and share patient information impedes virtual care.

In Canada, patients own their health information. Patient-centered information design is not only a legal prerogative, but an architectural necessity; to truly meet the health needs of the patient, their composite personal health information must be designed to follow them through the course of their care. To achieve this requires an integrated approach to health information design that aligns not only technology, but workflow and policy across stakeholders. Siloed virtual care policy and workflow perpetuates system fragmentation and impairs quality care.

A notable finding of the Working Group was almost complete unanimity on the features of an idealized virtual care system. This consensus demonstrated that the obstacle to achieving optimized virtual care was principally one of process: how do we achieve this idealized state? The Working Group first addressed this by defining the idealized state according to a set of virtual care Design Principles to serve as a common and unifying objective.

A coordinated effort will be required to assure the common Design Principles are universally applied and adapted to the unique needs of specific health sector stakeholders. To achieve this, the Working Group recommended the formation of a Virtual Care Coordinating Body, a consensus-based working group directed to curate the virtual care Design Principles, and work with stakeholders to align virtual care policy across the health sector. Key features of the Virtual Care Coordinating Body are meaningful representation from Indigenous and patient representation, and alignment with overarching eHealth governance and strategy in Alberta.

Nothing prevents health sector stakeholders in Alberta from working collaboratively to optimize virtual care but the will to do so. Whether we are government, regulators, professional associations, health authorities or educators, we bear a collective responsibility to the beneficiaries of care – the patient, for whom health service exists – to cooperate in health system design. To optimize virtual care, we need to establish a mechanism for cooperation, and the ground rules for engagement. In essence, that is what the Working Group has proposed; a means to cooperate around a common virtual care goal.

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