

# Typology of virtual primary care in Canada

## Making the implications clear

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**A**cross Canada, provincial and territorial governments are pursuing different approaches to virtual primary care. Ontario, for example, preferentially funds virtual care within an established patient–primary care provider (PCP) relationship; Newfoundland and Labrador and the Maritime provinces have multimillion-dollar contracts with corporations owned by for-profit investors to provide direct-to-consumer virtual care services.<sup>1</sup> Although these governments all seek to improve primary care, particularly timely access to care, the pursuit of different virtual care approaches suggests a lack of clarity about how these models impact quality of primary care, health system costs, and health outcomes, and indicates these models evolved in absence of consistent legislative and regulatory standards. Many Canadian organizations made policy recommendations<sup>2,3</sup> but few addressed implications of the different models of virtual care.<sup>4,5</sup>

We therefore propose a typology for categorizing approaches to virtual primary care in Canada aimed at providing a structured link between a model's key organizational attributes and health outcomes using a quality-of-care framework. We take a critical political economy perspective, which brings attention to how health and health systems, like other aspects of society, are shaped by underlying economic structures.<sup>6</sup>

### High-quality primary care

Numerous studies demonstrated that high-quality primary care has an outsized positive impact on individual and population health.<sup>7</sup> As a result, there has been interest in characterizing the specific features of primary care that optimize performance. Starfield defines the key attributes of primary care as “first-contact, continuous, comprehensive, and coordinated care provided to populations undifferentiated by gender, disease, or organ system.”<sup>8</sup> Building on this definition, the World Health Organization's (WHO's) systems-level model describes high-performing primary care as the first point of contact, comprehensive, coordinated, people-centred, continuous, and accessible.<sup>9</sup> The WHO's model also includes the Institute of Medicine's characteristics of high-quality care—timely, integrated, efficient, equitable, people-centred, effective, and safe.<sup>9</sup> In the systems perspective, the WHO highlights the importance of universal coverage, empowered people, and integrated health services that prioritize primary care. More recently, scholars also focused on the core importance of information infrastructure, as data systems have the potential to improve most aspects of care but also present risks (eg, provider burnout, harms to patient health and well-being, privacy breaches).<sup>10,11</sup>

### Virtual care in Canada

Most people in Canada have accessed virtual care (Table 1),<sup>12</sup> typically from their own PCP in the course of comprehensive care.<sup>13,14</sup> The telephone is the most used virtual care method.<sup>13</sup> Some PCPs also offer secure messaging and video communication, either integrated with electronic medical record (EMR) platforms or through separate commercial platforms.<sup>15</sup> These commercial platforms are often “software as a service” programs, where the technology company stores and maintains patient data on a remote, rather than local, server.<sup>16</sup>

Primary care providers in Canada are regulated professionals, primarily self-employed FPs who work alone or in small groups, and are paid by a provincial or territorial public funder.<sup>17</sup> Some are contracted or employed by a non-profit health clinic or a for-profit, investor-owned corporation (Box 1). While non-profit clinics exclusively bill the public system, for-profit corporations sometimes bill privately or offer a mix of privately and publicly funded FP and nurse practitioner (NP) services.<sup>18</sup> Canada also has a small number of NPs who provide primary care. Primary care NPs generally cannot directly bill the public funder and are typically employed by FPs or non-profit clinics.<sup>19</sup> Increasingly, however, they are employed by for-profit investor-owned corporations who bill privately for primary care NP services.<sup>20</sup>

Many people in Canada also use commercial direct-to-consumer virtual care services (also called *walk-in virtual care*).<sup>21</sup> In this model, patients use a proprietary

**Table 1. Definitions of terms**

TERM	DEFINITION
Virtual care	“Any interaction between patients and/or members of their circle of care, occurring remotely, using any forms of communication or information technologies, with the aim of facilitating or maximizing the quality and effectiveness of patient care” <sup>12</sup>
For-profit, investor-owned corporation	A private sector entity with fiduciary responsibilities to shareholders
Primary care providers	FPs and NPs
Integrated care	Care as part of ongoing, in-person comprehensive primary care from the same provider or group of providers
NP—nurse practitioner.	

software platform (ie, an app or a website) to initiate a virtual care appointment with a PCP who is not part of their regular care team.<sup>22</sup> The platform is owned by a company, typically a for-profit investor-owned corporation (**Box 1**). The company hires or contracts FPs or NPs to provide primary care to patients. Most of these companies do not offer in-person services or follow-up appointments with the same provider.<sup>23</sup> Some bill the public system for primary care services provided by FPs or NPs, while others bill patients or patients' employers. Some also bill both by, for example, charging patients membership fees to access publicly funded physician services.<sup>18</sup> Further, many companies flip between funding models over time and by jurisdiction depending on current regulations and the amount a public payer pays for a virtual care visit.<sup>24</sup> For example, when Ontario decreased payments for virtual care services that were not integrated into ongoing care (direct-to-consumer services), many platforms switched to a private-pay membership model or found other ways to bill patients privately.<sup>24</sup>

## Constructing the typology

To create our typology, we identified multiple "ideal" types of virtual health services. Ideal types are unique combinations of organizational attributes "believed to determine the relevant outcomes"<sup>25</sup>—in this case, high-quality primary health care. Of note, a typology does not consist of mutually exclusive and exhaustive classifications, but rather organizational types based on outcomes.<sup>25</sup> To start, we identified the key distinct organizational attributes of virtual care services likely to affect the quality of primary care. These attributes include delivery of care, integration with in-person care, and funding of care (**Box 1**).

These attributes were used to produce our typology, which includes 3 main types and 4 subtypes of virtual

care models in Canada. In the regulated PCP model, virtual care is overseen by a regulated PCP, either an FP or NP; relies on a third-party for-profit technology company (eg, an EMR vendor) for data collection and storage; is integrated into ongoing in-person comprehensive care; and is billed to the public funder. The non-profit model is similar except that a non-profit organization oversees care. In the commercial virtual care model, a for-profit investor-owned corporation oversees care, data collection, and data storage. Care may be standalone (standalone subtype) or integrated into ongoing in-person comprehensive care (integrated subtype). Family physician and NP services may be billed publicly (publicly funded subtype), funded privately (privately funded subtype), or funded by a mix of both (privately funded subtype) (**Tables 2 and 3**).<sup>26-29</sup>

## Implications: types and associated outcomes

**Regulated PCP model.** The regulated PCP model has the potential to improve the quality of patient care by offering virtual care integrated into ongoing, comprehensive in-person care. Continuity of care is associated with better health outcomes, lower system costs, and high patient satisfaction.<sup>30,31</sup> The associated access to in-person care can potentially mitigate the risks of over-diagnosis and overtreatment that can occur with disconnected virtual-only approaches.<sup>32,33</sup> Further, this model is more likely than others to reduce health system costs.<sup>34-36</sup> However, patients without a PCP do not benefit from this model, as only attached patients can access virtual care services. Further, as governments have not mandated that the third-party companies (ie, health information technology vendors) provide the infrastructure to collect, store, and exchange patient data in ways that are interoperable with other platforms, the model perpetuates informational discontinuity.<sup>37,38</sup>

**Non-profit model.** The non-profit model (eg, community health centres) also has the potential to provide high-quality virtual care, as the model offers in-person, ongoing comprehensive care. Further, many of these centres have mandates to prioritize access for high-needs and structurally marginalized populations, helping mitigate inequities in access to care.<sup>39</sup> Like the regulated PCP type, informational discontinuity remains an issue.

## Commercial models

**Publicly funded subtypes:** Publicly funded subtypes of commercial models have the potential to increase rapid and convenient access to care through a virtual platform that reaches across a jurisdiction untethered to bricks-and-mortar clinics. As such, they appear to produce high patient satisfaction.<sup>40,41</sup> However, like the regulated PCP and non-profit models, publicly funded commercial models also struggle to find PCPs to provide health services.<sup>42</sup> Problematically, most of these

### Box 1. Key organizational attributes that are likely to impact quality of care

#### Care delivery

- What kind of entity administers and oversees the provision of the virtual care services?
- What kind of entity administers and operates the technical platform that enables the virtual visit with the PCP?

#### Integration with in-person care

- Is the virtual care service provided in the context of an existing patient-PCP relationship?
- Can the patient seek ongoing comprehensive care in person from the same PCP or primary care team?

#### Funding source

- Is the PCP virtual care service publicly funded, private-pay, or a combination of both?

PCP—primary care provider.

**Table 2. Typology of virtual primary care services in Canada**

TYPES	KEY ATTRIBUTES				
	OVERSIGHT	TECHNOLOGY	INTEGRATION*	FUNDING†	EXAMPLES
Regulated PCP model	Regulated PCP	For-profit company	Integrated	Public	Most primary care clinics in Canada
Non-profit model	Non-profit organization	For-profit company	Integrated	Public	Community health centres (eg, in Ontario, BC, and Yukon)
Commercial model	For-profit investor-owned corporation	For-profit company	Varies‡	Varies‡	Examples provided in Table 3 <sup>26-29</sup>

BC—British Columbia, PCP—primary care provider.  
 \*Integrated care is part of ongoing, in-person comprehensive primary care with the same provider or team of providers.  
 †FP and nurse practitioner services.  
 ‡See Table 3 for more details.<sup>26-29</sup>

**Table 3. Subtypes of commercial virtual care in Canada**

SUBTYPE	KEY ATTRIBUTES		
	INTEGRATION*	FUNDING†	EXAMPLE
Standalone and publicly funded	Standalone	Public	Maple (Nova Scotia) <sup>26</sup>
Standalone and privately funded	Standalone	Private	Rocket Doctor (Ontario) <sup>27</sup>
Integrated and publicly funded	Integrated	Public	Appletree Medical Group (Ontario) <sup>28</sup>
Integrated and privately funded	Integrated	Private or mix of private and public	Lacroix Private Medicine (Quebec) <sup>29</sup>

\*Integrated care is part of ongoing, in-person comprehensive primary care with the same provider or team of providers.  
 †FP and nurse practitioner services.

platforms are of the standalone subtype, with no or limited access to in-person care.<sup>24</sup> As a result, they disrupt continuity of care<sup>30,31</sup> and may lead to missed diagnoses, overdiagnosis, and overtreatment.<sup>32,33</sup> The standalone subtype may also negatively impact health system sustainability to the extent that PCPs abandon or spend less time in comprehensive primary care practice in favour of offering standalone virtual care services. Further, through rapid and convenient access to care, this model may increase health system costs by driving the use of low-value care.<sup>34</sup> The lack of in-person services may increase follow-up visits and emergency department use compared with integrated models.<sup>21,43</sup> Finally, the model does not appear to offer any upfront cost savings: When governments pay less for virtual care than in-person services, companies stop offering the publicly funded virtual care service and bill patients privately instead.<sup>44,45</sup>

**Privately funded subtypes:** The privately funded subtypes (with private funding or mixed private and public funding) pose additional problems. These models create a 2-tiered system where those who can pay get rapid access to services and those who cannot are excluded from care.<sup>23,46</sup> The privatization of services is also likely to increase overall health system costs.<sup>47-49</sup> Further, as privately funded subtypes do not submit billing information to provincial or territorial governments, academics

and government agencies lack access to patient data for research and health system improvements.<sup>18</sup>

**All commercial models:** As the companies that own commercial virtual care models (ie, integrated and standalone subtypes) are typically for-profit investor-owned corporations, they have an obligation to shareholders.<sup>18</sup> The need to produce returns for shareholders not only increases costs but may also lead to business practices not in patients' best interests. For example, many corporations with a virtual care platform in Canada use patient registration data and user information to market other products and services.<sup>22</sup> Some also use personal health information to influence patient care pathways for commercial gain.<sup>22</sup> Further, since companies appear to view patient data as a profit-generating asset, they may be reluctant to share data across the health system, worsening informational discontinuity.<sup>22</sup> Accountability to shareholders also means corporations start billing patients privately or change the services offered when public funding no longer produces acceptable returns.<sup>45</sup>

## Recommendations

We recommend stakeholders advocate for the expansion of regulated PCP and non-profit models of virtual care, where virtual care is integrated into ongoing comprehensive primary care. As described above, these models

have the potential to improve health outcomes and generate health system savings. We have several caveats. When expanding support for this model, provincial and territorial governments should create and regulate primary care systems where everyone is guaranteed timely access to high-quality primary care, including virtual care. The federal government's interoperability model, proposed in Bill C-72,<sup>50</sup> should be operationalized in a harmonious way across provinces and territories. This legislation is just a first step. Governments should produce comprehensive legislation and regulations for virtual care platforms, EMR systems, and other technologies to ensure they support high-quality care and minimize all forms of health data-related harm. Further, legislation is urgently needed to better protect health data, including de-identified personal health information. Governments could consider novel approaches such as creating a person-centric data stewardship model rather than a health data custodial model<sup>37</sup> and creating public or non-profit EMR systems<sup>38</sup> (Box 2).

If stakeholders support publicly funded commercial models they should demand a similar standard of care. Governments should require that virtual care be integrated into ongoing comprehensive primary care and be part of an accountable system that ensures everyone has timely access to high-quality care. As described above, governments should produce comprehensive legislation and regulation to ensure platforms, EMRs, and other technologies enable high-quality primary care. This includes operationalizing the federal government's interoperability model and providing better protections for health data. All data gathered through the provincial and territorial health systems should be considered a public good, not a potential revenue stream, and be under public governance. If governments do not set these standards, the commercial models present substantial risks to continuity of care, health system sustainability, access to comprehensive care, interoperability, and data privacy. Stakeholders should be aware, however, these investor-owned private-sector companies have obligations to generate returns for shareholders, which may negatively affect patients and health systems in ways governments may not anticipate.<sup>22</sup> As such, governments should be prepared to amend legislation, regulations, and contracts.

We strongly recommend stakeholders do not support the privately funded (or partially privately funded<sup>49</sup>) commercial virtual care models. These models are likely to increase health system costs and drive inequities by creating a 2-tiered health care system. As such, governments should limit this model by investing in comprehensive publicly funded primary care and addressing loopholes in existing legislation meant to discourage private billing and public subsidy of a private system.<sup>51</sup> In particular, governments should expand public funding for primary care NPs; designate virtual care services (including

## Box 2. Actions stakeholders can take to support high-quality primary care

### Federal government

- Create mechanisms to encourage provinces and territories to expand support for comprehensive primary care
- Ensure proposed federal interoperability legislation becomes law and is operationalized
- Enhance data privacy legislation
- Close loopholes that promote private billing and a 2-tiered health system

### Provincial and territorial governments

- Expand support for comprehensive primary care
- Create accountable primary care systems
- Preferentially fund virtual care that is integrated into ongoing care
- Operationalize interoperability legislation within and across jurisdictions
- Enhance health data privacy legislation
- Close loopholes that promote private billing and a 2-tiered health system

### Medical regulators

- Discourage providers from consenting to share patient data with commercial entities without patient consent
- Discourage providers from working for entities that bill privately

### Primary care providers

- Seek to work in models that provide integrated virtual care
- Do not consent to share patient data with commercial entities without explicit patient consent
- Do not work for entities that bill privately for necessary health services

### Organizations that represent primary care providers, patients, groups, and communities

- Advocate for expanded access to high-quality primary care and integrated virtual care
- Advocate for mechanisms to eliminate 2-tiered health care
- Advocate for the harmonized operationalization of the proposed federal interoperability legislation

### Companies with virtual care platforms

- Ensure virtual care is integrated into ongoing, in-person comprehensive care
- Follow best guidance to make data interoperable
- Bill the public health system for virtual care services
- Do not bundle publicly funded virtual care services with private-pay services

text-based communication) and NP primary care services as necessary health services under the Canada Health Act<sup>52</sup>; and explicitly prohibit companies from charging membership fees to access necessary health services.

## Conclusion

Our typology provides needed clarity to support an ongoing discourse about how different models of virtual care impact health outcomes and health system function. It indicates an urgent need for public policy reform to



address not only the quality of virtual primary care but primary care overall. Governments and other stakeholders need to promote the expansion of comprehensive and accountable primary care services with integrated virtual care. They also need to develop mechanisms to ensure data interoperability across health care settings and jurisdictions and to better protect patient privacy. Otherwise, provinces and territories are at risk of perpetuating a patchwork of approaches, some of which undermine the promise of primary care and the objectives of the Canada Health Act.<sup>52</sup> Future work, therefore, should consider how to best design a public policy approach, including roles for each group of stakeholders, that support high-quality virtual care services within a comprehensive and accountable primary care model. Future work should also examine and compare approaches and recommendations from other jurisdictions.

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#### Competing interests

None declared

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