Contrasting current challenges from the Brazilian and Canadian national health systems

The Besrour Papers: a series on the state of family medicine in Canada and Brazil

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Abstract

Objective To compare the national health systems of Canada and Brazil and how both countries have addressed similar challenges in their primary care sectors.

Composition of the committee A subgroup of the Besrour Centre of the College of Family Physicians of Canada developed connections with colleagues in Brazil and collaborated to undertake a between-country comparison, comparing and contrasting various elements of both countries' efforts to strengthen primary care over the past few decades.

Methods Following a literature review, the authors collectively reflected on their experiences in an attempt to explore the past and current state of family medicine in Canada and Brazil.

Report The Brazilian and Canadian primary care systems are faced with similar challenges, including geography, demographic changes, population health inequities, and gaps in universal access to comprehensive primary care services. Although the approaches to addressing these challenges are different in both settings, they highlight the central importance of family physicians in both systems. Both countries continue to face considerable challenges in the context of mental health services in primary care. It remains important for Canada to draw lessons from the primary care systems and reforms of other countries, such as Brazil.

Editor's key points

- This article is the continuation of a new series comparing the state of family medicine in 2 countries—Brazil and Canada.
- Both countries have similar primary care characteristics: the northern parts of both countries have great difficulty with geographic access, and both countries have attempted to reorganize their respective primary care sectors in recent years. It can be interesting and instructive to compare different approaches to addressing these similar challenges.
- This comparison reveals interesting similarities, including that both countries are committed to universal health care, but it also explores key differences in the structure and delivery of care.

Points de repère du rédacteur

- Cet article constitue la suite d'une nouvelle série d'articles qui comparent l'état de la médecine familiale dans deux pays : le Brésil et le Canada.
- Les deux pays ont des caractéristiques similaires en matière de soins primaires : les zones septentrionales des deux pays ont d'importants problèmes d'accès géographique, et les deux pays ont tenté, ces dernières années, de réorganiser leur secteur des soins primaires. Il peut être intéressant et instructif de comparer des démarches différentes pour résoudre ces problèmes semblables.
- Cette comparaison fait ressortir des similitudes intéressantes, notamment le fait que les deux pays croient à l'importance des soins de santé universels, mais elle se penche également sur quelques différences clés dans la structure et la prestation des soins.

Comparaison des défis auxquels sont actuellement confrontés les systèmes de santé nationaux brésilien et canadien

Les documents Besrour : une série sur l'état de la médecine familiale au Canada et au Brésil

Résumé

Objectif Comparer les systèmes de santé nationaux du Canada et du Brésil et la façon dont les deux pays ont fait face à des défis semblables dans leur secteur des soins primaires.

Composition du comité Un sous-groupe du Centre Besrour du Collège des médecins de famille du Canada a tissé des liens avec des collègues au Brésil et a entrepris une étude, en comparant les divers éléments des deux pays qui visaient à renforcer les soins primaires au cours des dernières décennies.

Méthodes À la suite d'une révision de la documentation, les auteurs ont fait un retour collectif sur leurs expériences dans le but d'explorer l'état passé et actuel de la médecine familiale au Canada et au Brésil.

Rapport Les systèmes de soins primaires brésilien et canadien sont confrontés à des défis semblables, notamment en ce qui concerne la géographie, les changements démographiques, les inégalités en matière de santé de la population et les lacunes dans l'accès universel à des services complets et globaux de soins primaires. Bien que les moyens employés pour relever ces défis soient différents dans les deux pays, ils mettent en évidence l'importance centrale des médecins de famille au sein des deux systèmes. Les deux pays continuent d'éprouver des difficultés considérables en santé mentale en soins primaires. Il demeure important pour le Canada de tirer des leçons des systèmes de soins primaires et des réformes effectuées dans d'autres pays, comme le Brésil.

This article is the continuation of a new series comparing the state of family medicine in 2 countries—Brazil and Canada—and it aims to compare the national health systems of both countries and how they have addressed similar challenges in their primary care sectors.

Composition of the committee

A subgroup of the Besrour Centre of the College of Family Physicians of Canada developed connections with colleagues in Brazil and collaborated to undertake a between-country comparison, comparing and contrasting various elements of both countries' efforts to strengthen primary care over the past few decades.

Methods

Following a literature review, the authors collectively reflected on their experiences in an attempt to explore the past and current state of family medicine in Canada and Brazil.

Report

Historical evolution

Brazil: In 2018, the Brazilian national health system (Sistema Único de Saúde [SUS]) celebrated 30 years of existence. Since its acceptance into the Federal Constitution in 1988, the SUS has been recognized and evaluated as one of the largest public policies for social inclusion in Brazil. While the main financier of the universal health care model in Brazil is the federal government, the management of resources is decentralized to the municipal level, which allows for available resources to be allocated based on local needs.[1]

Although the SUS provides a universal system, Brazil also has a private subsystem, consisting mainly of private health care plans. The private system is an important contributor to health care delivery, with approximately a quarter of the population having private health care plans.[2] In 2010, total health expenditure accounted for 8.9% of the gross domestic product, with the public sector making up 46.4% of expenses and the rest being made up of a combination of private sector and substantial out-of-pocket spending.[3]

An important innovation in the Brazilian health system has been the development, adaptation, and rapid scaling up of a community-based approach to providing primary health care.[1] The Family Health Strategy (FHS) has evolved into a robust approach to providing primary care for defined geographic populations deploying interdisciplinary health care teams. The nucleus of each FHS team includes a physician, a nurse, a nurse technician, and 4 to 6 full-time community health agents. Family health teams cover populations of up to 1000 households each, with no overlap or gap between catchment areas.

Canada: The roots of the Canadian "Medicare" system go back to the 1940s, with the implementation of a critical injury and hospital services plan in the province of Saskatchewan. Statutes passed in the 1950s and 1960s provided federal funds for partial reimbursement of provincial costs for specified hospital and diagnostic services, and then for medical services provided outside hospitals; by the early 1970s, all provinces and territories had universal physician services insurance plans. In 1994, the federal government passed the Canada Health Act, which defined the conditions provinces and territories must adhere to in order to receive federal funding for health services, including covering an essential basket of services.[4,5] Although about 70% of Canadian health care is financed publicly, almost all of this care is delivered by private (usually not-for-profit) institutions and practitioners, typically on a fee-for-service basis.[6]

Covered services are comprehensive but in most provinces do not typically include dental, rehabilitative, or pharmaceutical costs except for certain populations like the young and the elderly. Such costs are paid out-of-pocket or through supplementary private health insurance plans, often provided by employers. There is currently a movement toward a national pharmacare program, but at the same time, there is ongoing pressure for privatization of some services, especially in the area of diagnostic imaging.[7-9]

As compared with Brazil, individual physicians retain a lot of agency in the system, in that they typically have a final say in practice composition and any areas of focus. Primary care practices are typically run as a small business and are variable as a result, although the trend is toward team-based care. Practices typically do not have a geographic catchment responsibility, with the notable exception of community health centres and some of the newer family health team models in certain provinces.[10,11]

In short, even though the Brazilian system is more decentralized, in that municipalities manage health care budgets, there is more variability in health care delivery within the Canadian system. Some would say that there are in fact 17 different systems in Canada: 1 for each province and territory, 1 for First Nations and Inuit populations living on designated territories, 1 for federal inmates, 1 for members of the armed forces, and 1 for newly arrived government-sponsored refugees. On the other hand, in Brazil, federal funding supports a single national health system to address all populations, which is complemented by private health plans.

Context: demographic structure and medical personnel in Canada and Brazil. Both Canada and Brazil are vast geographically—Canada having the second largest, and Brazil the fifth largest, land mass in the world. However, Brazil is approximately 6 times more populous than Canada, and there is a subsequent considerable difference in population density. Canada is in an advanced stage of demographic transition, with a relatively high proportion of elderly inhabitants; Brazil is at an intermediate stage, with a greater number of younger people (**Figure 1**).[12,13] As a high-income country, Canada has higher per capita health expenditures, greater life expectancy at birth and lower rates of infant and maternal mortality, and a proportionately greater numbers of hospital beds, physicians (including family medicine specialists), and nursing and midwifery personnel compared with Brazil, an upper-middle income country (**Tables 1** and **2**).[14-23]

There is a substantial difference in the number of certified specialist physicians in Canada and Brazil. In Brazil, it is possible to work in primary care without a specialist qualification, whereas all Canadian physicians must have additional specialist (eg, family medicine) training to work in primary care. This means that out of a total of 388 203 Brazilian physicians, only 228 862 (59.0%) are certified specialist physicians. Of this total, 1.8% are family physicians and 98.2% work in other specialties.[23] This demonstrates the great heterogeneity in professional training in Brazil and presents a challenge for the primary care sector, certainly when it comes to standardizing processes. In Canada, the breakdown of physicians is weighted more heavily to primary care, where out of 84 063 physicians, 50.6% are certified in family medicine.[22]

Principal challenges for the national health systems. Among the main challenges for the implementation of national health systems in Canada and Brazil, we highlight 3 similarities.

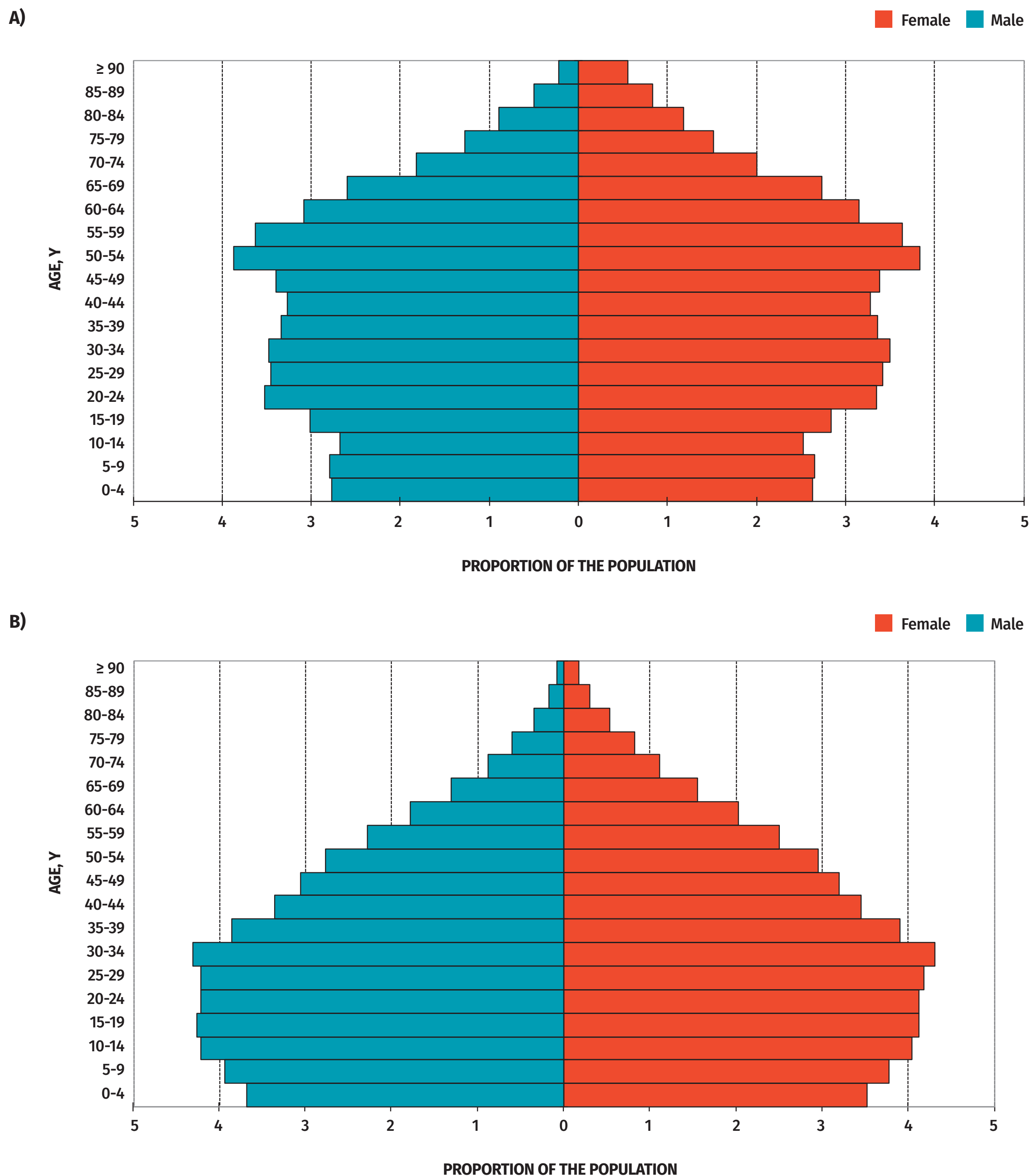
Demography and equitable access to care: The vast geographic area and low population density in the northern regions of both countries present challenges for the provision of services and the establishment of health professionals. Both countries continue to develop and improve access to telemedicine technologies, for instance, and this will be the focus of an upcoming paper in this series.

With a life expectancy at birth of more than 80 years,[15] Canadians have recognized the need to develop improved home care and long-term care programs, but progress has been slow. As health care is a provincial responsibility, coordinated responses to national demographic trends such as an aging population can be challenging. However, some federal money transfers to the provinces have been tied to the development of home-care programs.[24] Among Brazilians, aging also presents a demographic challenge, and this has led to the development of home-care programs for the elderly, which are mainly funded through municipal transfers.[25]

Historically, population migration has been a key source of Canada's growth and development, with the country still having the highest immigration rate in the Americas.[26] Recently, the influx of Syrian refugees has highlighted how access to care remains inequitable for certain groups and minorities, with the urgent need for reform of some sectors, including mental health services.[27] In many cases, innovations in health care provision for new Canadians point the way for innovations in the wider system. In Brazil, the state of Roraima has welcomed Venezuelan refugees, increasing the burden on primary care services in this region.[28]

Both Canada and Brazil have colonial histories and substantial Indigenous populations. In Brazil, universal health care has been critical not only for the general population, but also for minority groups such as the Quilombola (born of the former descendants of slaves), people living in the Amazon region, and those in riverside communities, which remain very isolated.[29] Within each of these unique populations, the FHS has been the vehicle for the provision of primary health services. Similarly, Indigenous populations in Canada have benefited from universal health care, although

Figure 1. Population pyramids: *A) Canada (2011) and B) Brazil (2010).*



Data from Statistics Canada[12] and Instituto Brasileiro de Geografia e Estatística.[13]

considerable issues exist in ensuring penetration of services.[30] This has led to calls for an equity lens to be applied to all health services initiatives.[31]

Unmet health needs and the exemplar of mental health services: Despite a focus on universal access to health care in both countries, important gaps remain. In general, there is a trend to overvaluation of technology at the expense of care based on human effort and contact. Thus, we see a devaluation of time-proven approaches such as rehabilitative services, including physiotherapy,[32] and the broad domains of patient education and counseling. In addition, we have seen that there is considerable

Table 1. Selected sociodemographic characteristics and health expenditures in Canada and Brazil

	CANADA		BRAZIL	
CHARACTERISTICS	VALUES	SOURCE, YEAR	VALUES	SOURCE, YEAR
Basic demographic characteristics				
Population (inhabitants)	36 286 425	UN DESA, 2016[14]	206 081 432	UN DESA, 2016[14]
Distribution, %				
• Urban	81	UN DESA, 2011[14]	86	UN DESA, 2016[14]
• Rural	19	UN DESA, 2011[14]	14	UN DESA, 2016[14]
Geographic area, km^2	9 093 507	UN DESA, 2011[14]	8 515 767	UN DESA, 2016[14]
Demographic density, inhabitants/km^2	4	UN DESA, 2011[14]	24	UN DESA, 2016[14]
Most populous cities				
• 1	Toronto: 2 876 095	UN DESA, 2016[14]	São Paulo: 12 038 175	UN DESA, 2016[14]
• 2	Montreal: 1 763 288	UN DESA, 2016[14]	Rio de Janeiro: 6 498 837	UN DESA, 2016[14]
• 3	Calgary: 1 318 817	UN DESA, 2016[14]	Brasília: 2 977 216	UN DESA, 2016[14]
• 4	Ottawa: 973 481	UN DESA, 2016[14]	Salvador: 2 938 092	UN DESA, 2016[14]
Demographic indicators				
Life expectancy at birth, y	82	World Bank, 2016[15]	76	World Bank, 2016[16]
Infant mortality rate per 1000 births	4	World Bank, 2016[15]	14	World Bank, 2016[16]
Maternal mortality rate per 100 000 live births	7	World Bank, 2016[15]	44	World Bank, 2016[16]
Total fertility rate (anticipated births/ woman)	1.6	World Bank, 2016[15]	1.7	World Bank, 2016[16]
Net migration rate* per 1000 population	33.84	World Bank, 2010[15]	0.08	World Bank, 2010[16]
Proportion of population ≥ 65 y	17	World Bank, 2010[15]	8	World Bank, 2010[16]
GDP, $ (US)	1.5 trillion	World Bank, 2016[15]	1.8 trillion	World Bank, 2016[16]
Health expenditures				
Per capita, $ (US)	5093	CIHI, 2017[17]	1121	World Bank, 2011[18]
As a percentage of GDP	11.5	CIHI, 2017[17]	9	World Bank, 2011[18]
Public sources, % of total	70	CIHI, 2017[17]	46	World Bank, 2011[18]
Private insurance, % of total	12	CIHI, 2017[17]	31	World Bank, 2011[18]
Out-of-pocket, % of total	15	CIHI, 2017[17]	22	World Bank, 2011[18]
Other sources, % of total	3	CIHI, 2017[17]	0	World Bank, 2011[18]

CIHI—Canadian Institute for Health Information, GDP—gross domestic product, UN DESA—United Nations Department of Economic and Social Affairs.
*The *net migration rate* is defined as the number of immigrants minus the number of emigrants over a specified period, divided by the person-years lived by the population of the receiving country over that period. It is expressed as average annual net number of migrants per 1000 population.

heterogeneity in both systems. This presents challenges when it comes to large-scale innovations, as with national pharmacare in Canada, for example.

However, perhaps no issue exemplifies unmet health needs as acutely as that of mental health care. In both countries, unmet mental health care needs are substantial both in wider society and also in specific populations.[33,34]

In Canada, setting national directions can be challenging in a system devolved by province, and the federal role is largely a funding one. To ensure a focus on mental health initiatives, certain deliverables in mental health have been tied to recent federal health budgets.[24] However, it remains to be seen if these efforts are sufficient with so many competing priorities and with stigmatization rampant both within the system and in wider society.[33]

In Brazil, since 2001, when a federal law on psychiatric reform was approved, the mental health care model has been through several cycles of reorganization. This has included the gradual elimination of psychiatric hospitalization and its attendant social exclusion, and the creation of a network of psychosocial care and multiprofessional support teams in the community. The role of the family physician is critical in this network in that family physicians coordinate this care and refer more serious cases to higher levels of care. However, this network is still insufficient to support cases referred by family doctors, and further supports in the area of mental health are required.

In both contexts, recent unmet refugee health care needs, as well as the current opioid addiction crisis, are highlighting that substantially greater investments

Table 2. Health system indicators in Canada and Brazil

INDICATORS	CANADA	BRAZIL
Health care coverage		
• Funding of public insurance	Provincial or territorial health insurance plans	Federal unified health system
• Public insurance coverage	All permanent residents*	All citizens
• Private insurance coverage, %	> 60[19]	26[18]
Health care access		
• Hospital beds/10 000 population	27[20]	22[21]
• Physicians/10 000 population	23[22]	17.64[21]
• Specialists in family medicine/all specialist physicians (%)	42 536/84 063 (50.6)[22]	4022/228 862 (1.8)[23]
• Nursing and midwifery personnel/10 000 population	104.32[20]	64.19[21]
Health system structure		
• Health care delivery	Mostly privately delivered (with the exception of certain groups such as the military and federal inmates)	Public and private delivery
• Referral to secondary or tertiary care	Family physicians play a gatekeeper role	Through family physicians (public system); patient may self-refer (private system)
• Payment of physicians	Usually paid fee-for-service or by capitation, some salaried	Combination of salary, pay-for-performance, fee-for-service, private
• Medication coverage	Might be funded for certain vulnerable groups (aged < 25 or ≥ 65 y)	Universal
• Dental care	Private insurance, out-of-pocket	Public and private insurance, out-of-pocket
Team-based primary care models		
• Team members	Variable composition	1 physician, 1 nurse, 1 nurse technician, 4 to 6 community health agents
• Patient population per team	Variable	3450 (on average)
• Allocation of patients to primary care teams	Capitation but not geographically based	Geographic

*This includes government-sponsored refugees but excludes irregular migrants and temporary visitors and students.

are necessary in the mental health sector. Both countries are simultaneously highlighting multidisciplinary approaches to these challenges while affirming the role of family doctors seamlessly weaving between physical and mental complaints with their patients.

An important part of the solution—reforms in vocational training: The comprehensive focus of family medicine training is thus vitally important in both Brazil and Canada. In Brazil, the first residency programs in family and community medicine were created in 1978. Today, there are more than 100 family medicine residency programs in the country, with more than 1600 positions in these programs each year. Considerable need in Rio de Janeiro, for example, has required the rapid upgrading of doctors to practise in family medicine. For this reason, in the Rio de Janeiro Municipal Department of Health there are an additional 150 family medicine residency positions each year *outside* of the university system. Family medicine is the only specialty supported in this way, and this upsurge of training is working, with more than 96% of the Rio de Janeiro Municipal Department of Health positions now occupied.[35]

In Canada, the system depends on approximately half of all practising physicians becoming family physicians, with a system stewardship and gatekeeper role. However, in recent years there has been an increase in the number of unmatched residency positions, with the bulk of unmatched spots being in francophone family medicine programs,[36] potentially adding to an unequal supply of services. Some urban centres have reached a saturation point for family doctors, while rural and remote parts of the country face acute shortages.[37] Centralized health work force planning has not been as successful in Canada as it has been in Brazil.

The medical curriculum in the field of family medicine has also continued to evolve in both Canada and Brazil to meet the evolving needs of each country's population. In Canada, family medicine training has moved to competency-based programs, which were modeled after the Royal College of Physicians and Surgeons of Canada's CanMEDS competencies.[38] Similarly, in 2014, the Brazilian Society of Family Medicine elaborated the curriculum to be competency based, in consultation and partnership with the University of Toronto in Ontario.[39]

This interesting partnership will form the basis of a future article in this series.

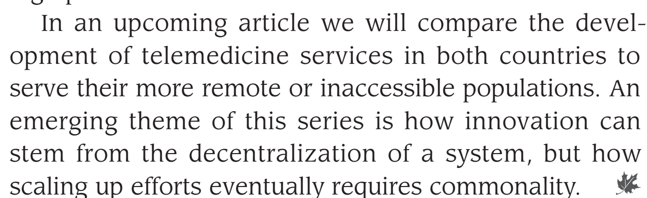
More recently, there has been a call to examine lengthening family medicine residencies in Canada,[40] with the current standard being 2 years in both countries. Perhaps this is in response to the competency-based movement of the specialty, the increasingly complex set of competencies required for family physicians to meet the evolving needs of society, and the realization that the standard length of residency programs in other regions is 3 years or more.[41]

Conclusion

Similar challenges exist in the primary care sectors of Canada and Brazil, and it is interesting to compare different approaches to addressing these. In both settings, geography, demographic changes, and population health inequities, as well as ongoing gaps in universal access to comprehensive primary care services, point to the central importance of family physicians in both systems. Mental health services in the context of primary health care remain a considerable challenge for both countries.

For Canadian readers, there are interesting lessons to be drawn from some of Brazil's reforms, such as the community-oriented primary care model and the expansion of training programs. Despite health budgets being even further devolved to the municipal level, Brazil has achieved certain national processes to permit the scaling up of reforms.

In an upcoming article we will compare the development of telemedicine services in both countries to serve their more remote or inaccessible populations. An emerging theme of this series is how innovation can stem from the decentralization of a system, but how scaling up efforts eventually requires commonality.



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Competing interests
None declared

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