INSTITUT C.D. HOWE INSTITUTE

COMMENTARY
NO. 630

Troubles in Canada's Health Workforce: The Why, the Where, and the Way Out of Shortages

Alarm bells are ringing over a shortage of workers in Canada's healthcare system. But where exactly are those shortages and what should be done about them from a human resources point of view? The solutions are within grasp. "Better" needs as much attention as "more."

Don Drummond, Duncan Sinclair, and Jillian Gratton

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Commentary No. 630
November 2022

$12.00
ISBN 978-1-989483-94-7
ISSN 0824-8001 (print);
ISSN 1703-0765 (online)

The Study In Brief

COVID-19 has piled troubles on top of troubles for Canada's health-care sector and its workforce. Some believe it to be in crisis, collapsing even, the result of a shortage of workers, who have become ill themselves, burned out, resigned or retired early, or the result of having too few educated and trained workers in the first place.

Shortages usually call for the education, training, qualifying, and hiring as soon as possible of many more workers. But we have to be careful. The shortages are in specific occupations. "Better" needs as much attention as "more."

This report analyzes the challenges in Canada's health-sector workforce, focusing on imbalances between supply and demand, particularly for those most concerned with the provision of direct, hands-on support and care: physicians, nurses, and personal support workers (PSWs). It then makes recommendations on how to govern and strengthen the country's cherished health system.

Despite public perceptions, Canada's supply of healthcare workers has been increasing significantly in most major occupations even throughout the pandemic. Work absences are not much higher than before; and for the most part, the proportion of workers in what is called direct care as opposed, for example, to administration, is both high and stable.

Yet demand has exceeded supply. The job vacancy rate for healthcare jumped to 5.8 percent by the second quarter of 2022, with that in nursing and residential care facilities (including nurses, personal support workers (PSWs) and others) higher still. Shortages also exist for family physicians, psychiatrists, geriatric and other specialists dealing with conditions affecting the elderly.

The stresses associated with COVID-19 have taken parts of the health sector beyond their limited capacity. Worsening conditions for many workers have worn down the resilience of nurses and personal support workers particularly, who have opted recently to take less stressful and/or better compensated employment available elsewhere in healthcare. Earnings, net of overtime, in healthcare have grown at an annualized pace of 2.4 over a two-year period ended in July 2022, compared to 4.1 percent for all industries. Many of the worker shortages are in hospitals yet wage gains there have been especially modest.

Many of the past and present health-sector human resource problems will likely worsen without appropriate planning, primarily due to population ageing.

Among our recommendations:

- The "system" needs a governance structure, starting at the provincial/federal level, to better collect data, analyze present and future challenges and make policy changes.
- The fragmented data from provinces and federal agencies such as the Canadian Institute for Health Information (CIHI), Statistics Canada and Canada Health Infoway need to be consolidated with improved timeliness and more comprehensive coverage.
- Accelerate the rate of development and expansion of Integrated Care Systems and similar care teams to ensure Canadians have ready access 24/7 to a family physician, nurse practitioner, or other provider of primary care services. They should be the "gate-keepers" to all other components of Canada's health system.
- Look to expand the scopes of practice of health professionals/providers with a view to minimizing duplication of skills, optimizing productivity and efficiency, and fostering teamwork, substitution, and interdependency among them.
- Promote the training, accreditation and success of students in less popular generalist programs. Enhance the status, professional standing, and rates of compensation of providers of general services in short supply like family medicine, geriatrics, rheumatology and PSWs, and improve working conditions to increase retention.
- Maintain or accelerate recent momentum with the licensing and employment of internationally educated health workers.
- Review the curricula and experiential content of training programs; for example, to better prepare graduates for family and community care roles.

COVID-19 may have a silver lining if it awakens the public, politicians and policymakers to the long and well-studied need to get on with making changes to Canada's cherished healthcare system to meet the challenges of ever-changing times.

Policy Area: Health Policy.
Related Topics: Healthcare Human Resources; Access to Care; Healthcare Delivery and Management; Healthcare Spending.
To cite this document: Drummond, Don, Duncan Sinclair, and Jillian Gratton. 2022. *Troubles in Canada's Health Workforce: The Why, the Where, and the Way Out of Shortages*. Commentary 630. Toronto: C.D. Howe Institute.

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COVID-19's effects, many tragic, continue to stress us all. With hospital emergency department closures and long wait times for pretty much everything, the pandemic's strain on the workers and institutions that provide us with healthcare and related support has become a hot topic.

Some believe the healthcare system to be in crisis, collapsing even, the result of a shortage of workers, who have become ill themselves, burned out, resigned or retired early, or the result of having too few educated and trained workers in the first place.

Ironically, the pandemic may have a silver lining. It may awaken the public to the long and well-studied need to get on with making changes to Canada's cherished healthcare system to meet the challenges of ever-changing times. The system is essentially unchanged since its development decades ago in boom times to serve a much younger population. COVID-19 has strained an already stressed system with predictable results. With increasing public awareness of the urgency of the need for fundamental change, our governments, health professional and institutional leaders together may find the courage to pick up the challenge of making fundamental change, long overdue. If they do, the stresses of COVID-19 will have done healthcare and support in Canada a power of good.

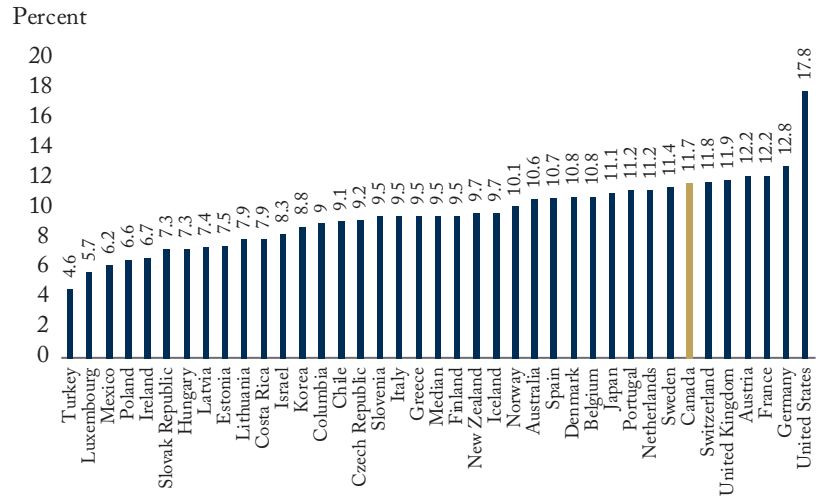
We will have to be careful. Shortages usually call for the education, training, qualifying, and hiring as soon as possible of many more workers, including from overseas. But the data we have are incomplete, often outdated, unstandardized and non-connected and this should raise a big cautionary flag. They show Canada's supply of healthcare workers to have been increasing significantly in most major occupations even throughout the pandemic, that work absences are not much higher than before; and for the most part, the proportion of workers in what is called direct care as opposed, for example, to administration, is both high and stable.[1]

But the emergency room (ER) closures and wait-list problems reported in the media are real and need to be resolved quickly. Increasing the supply of health-sector workers is a necessary but insufficient response to the troubles in the sector. We want our system of health care and support to meet our needs well into the future – a difficult challenge given that the Canadian health system's results are mediocre despite our devoting one of the highest shares of

The authors gratefully acknowledge the financial support of Dean Jane Philpott of Queen's University's Faculty of Health Sciences, and of the assistance of her advisory group of Catherine Donnelly, School of Rehabilitation Therapy, John Almost and Joan Tranmer, School of Nursing, and from St. Lawrence College, Barbara LeBlanc, Dean of Health and Wellness and Barry Weese, Associate Dean of Allied Health. We are grateful for material and comments received from Rosalie Wyonch of the C.D. Howe Institute, support from Parisa Mahboubi and comments from internal and external reviewers. They include Benjamin Dachis, Alexandre Laurin, Åke Blomqvist, Richard Chaykowski, Tom Closson, Claudia Hepburn, and Christopher Naugler.

1 However, provisional data for 2021 show a decline in the number of regulated nurses working in direct care in nursing homes and long-term care facilities and only a modest increase in hospitals but CIHI data for this purpose exclude Registered Psychiatric Nurses (RPNs) due to data quality issues.

Figure 1: Health Spending as a Percent of GDP in OECD Countries



Note: Latest data available, typically 2021 or 2020.

Source: OECD Data, Health Spending. https://data.oecd.org/healthres/health-spending.htm

GDP to healthcare in the world (Figure 1). "Better" needs to receive as much attention as "more."

This report first analyzes the challenges in Canada's health-sector workforce, focusing on imbalances between supply and demand. The Canadian health labour market encompasses more than 20 occupations. This *Commentary* deals mainly with those most concerned with the provision of direct care to those suffering illness and infirmity: physicians, nurses, and personal support workers (PSWs).[2] We then draw recommendations from that analysis on how to govern and strengthen the country's cherished health system.

Many of our recommendations will be disruptive and hard to implement quickly. They will demand better data to support planning and policy changes to meet evolving needs. The reformed system will have to deal especially with caring for and supporting our fast-growing population of elderly people in their most preferred and appropriate locations – their homes and communities and in institutions only when they can no longer age safely with support at home. About one in six hospital beds, the most expensive accommodations of all, are now filled by someone who should receive care elsewhere.[3]

Enabling effective and efficient teamwork for care and support will require changes to the scopes of practice of many health professions, particularly those providing primary care.

2 Physicians and nurses accounted for 58.9 percent of "professional" healthcare workers in 2020 (CIHI). There is uncertainty over the number of PSWs, but with their inclusion in this report, the vast majority of workers in the health sector is covered.

3 https://www.oha.com/Bulletins/MEDIA%20RELEASE%20-%20OHA%20Welcomes%20Premiers%20Council%20Report.pdf

Table 1: Job Vacancy Rate (percent) and Job Vacancy Level by Industry

	2015:Q2	2019:Q2	2022:Q2
Total, All Industries	2.9	3.5	5.9
	451,925	581,595	1,031,955
Healthcare Industry*	1.9	3.3	5.8
	30,095	55,870	109,145
Ambulatory Healthcare Services	2.1	2.8	5.3
	10,070	15,185	34,055
Hospitals	1.9	3.3	5.5
	11,175	22,750	37,825
Nursing and Residential Care Facilities	1.9	3.6	6.8
	8,790	17,935	37,270

Note: * Calculations for healthcare industry exclude data on social assistance.

Source: Authors' calculations using Statistics Canada, Job Vacancy and Wage Survey. Table 14-10-0326-02.

To beef up the supply of qualified practitioners to meet the system's ever-changing needs, our universities, colleges, clinical training institutions, and accrediting bodies need strategic policy guidance to develop short courses, concentrated programs, and more balanced selection criteria.

Developing a comprehensive human resource plan is essential and will inevitably point to the need for more workers in some fields, but not all. More personal support workers (PSWs), for example, will be needed. Education, training standards and recruitment will have to be changed for others, especially in primary care.

Strategies are overdue to make everybody's work more satisfying and rewarding and their mutual respect higher; the result, effective teamwork, is essential, especially in primary, home, and community care. This must be achieved as quickly as possible to reduce high attrition rates, especially evident for PSWs and nurses. Without improving retention, no number of new recruits will suffice.

The institutions and people who provide Canadians with health-related care and support are stressed. Although our "system" as a whole is not yet in crisis, critical parts of it may be. Continued dithering and timidity on the part of our leaders, both in government and within the health sector, could well be as much a hair-trigger for crisis as the return of polio or a new lethal strain of COVID-19 this fall. It is time for all to step up and make change happen. Canadians need and deserve no less.

Supply-Demand Imbalances for Health-Sector Workers

Job vacancies can be a measure of an excess of labour demand over supply. Pre-pandemic, the job vacancy rate – job vacancies as a percentage of all occupied and vacant jobs – across all industries in Canada was quite low and those for healthcare and its major sub-categories lower still (Table 1). The rate for all industries had risen somewhat by the second quarter of 2019 and by then the rate

Table 2: Unfilled Physician Opportunities

	2019	2020	2021
Total All Physician Opportunities	3,863	4,039	4,737
Family Medicine	2,040	2,055	2,448
Psychiatry	282	322	408
All Other Physician Specialties	1,541	1,662	1,881
Family Medicine – % of all Physician Opportunities	53%	51%	51%

Source: Authors' calculations using Canadian Medical Association data.

for healthcare had risen to 3.3 percent, almost matching that for all industries. The rise in vacancies for nursing and residential care facilities was particularly noteworthy, almost doubling to a level above that of all industries. Clearly, demand for workers in that category was building prior to the pandemic's onset.

The overall job vacancy rate jumped to 5.9 percent by the second quarter of 2022, the rate for healthcare to 5.8 percent, with that in nursing and residential care facilities higher still. At that point, there were 109,145 vacant positions in the health-care industry of which 37,270 were in nursing and residential care, the latter a combination of nursing and PSW occupations. In addition, job vacancies were high for "technical" and "assisting" occupations in healthcare (for details by occupation, see online Appendix A).

The portion of vacancies that lasted 90 days or more (long-term vacancies) in nursing doubled from 2015 to reach 55.6 percent in the second quarter of 2022. Throughout the 2015 to 2022 period, the percentage of long-term job vacancies was persistently higher for nurses than the average of all occupations in the economy, indicating the nursing positions have long been especially difficult to fill.

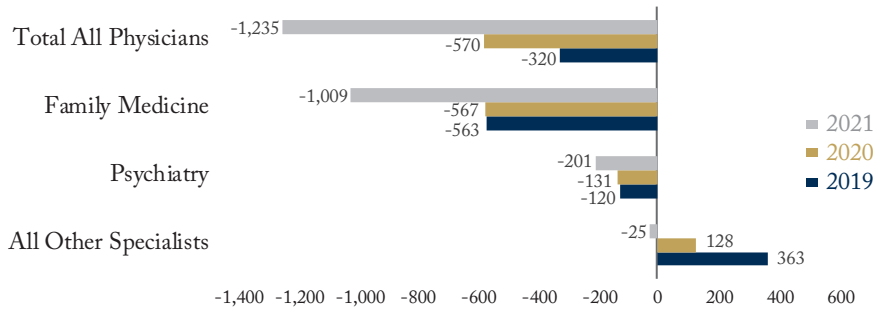
In the second quarter of 2022, there were 24,415 job vacancies in professional occupations in nursing. Below in the section on international comparators, we calculate that matching the median number of nurses per capita in the G7 would require more than another 45,000 nurses. This suggests that relative to the G7 countries, Canada has fewer nursing positions and is failing to fill many of them.

While data are not available from all provinces and territories, evidence from Ontario shows that not only job vacancy rates have substantially increased over time, but also turnover rates (see online Appendix B).

Imbalances in Medical Fields

Family Physicians and Psychiatrists: We examine job postings, postgraduate exits, and choice of postgraduate training by Canadian Medical Graduates (CMGs). Overall, a modest shortage of physicians exists in Canada. We have fewer physicians per capita than the medians of OECD countries and the G7. The number of physician job opportunities rose from 2019 through 2021, with family medicine accounting for slightly more than half each year (Table 2). The Canadian Medical Association's comparison of job postings for physicians with the number of newly qualified doctors shows there has been a significant and growing excess of job postings since tracking began

Figure 2: Differences in Physician Job Opportunities and Newly Qualified Doctors



Source: Authors' calculations using Canadian Medical Association. Physician Opportunities in Canada (2019-2021).

in 2013 (Figure 2). The imbalances are not evenly distributed; shortages are dominated by family medicine and to a lesser extent psychiatry.

Those findings are augmented by data from the Canadian Resident Matching Service (CaRMS) on the first choice of training specialty/discipline programs by new Canadian Medical Graduates (CMGs). The resultant analysis is only indicative; not all positions are posted, some are filled by foreign trainees, and some CMGs do postgraduate training outside Canada.

However, the data strongly indicate the gaps cannot and will not be filled by new entrants into post-graduate training. First, most specialty training programs are long and the through-put slow. Second, the fields facing growing and anticipated patient needs are diminishing in trainee popularity.

Whereas family medicine was the first choice of 42.9 and 41.1 percent of CMGs in 2019 and 2020, the CaRMS data show it to be the first choice of only 31.4 percent in 2021 (Figure 3); the total number of first choices was 914, compared to job postings of 2,448 in 2021 and 2,055 in 2020.[4]

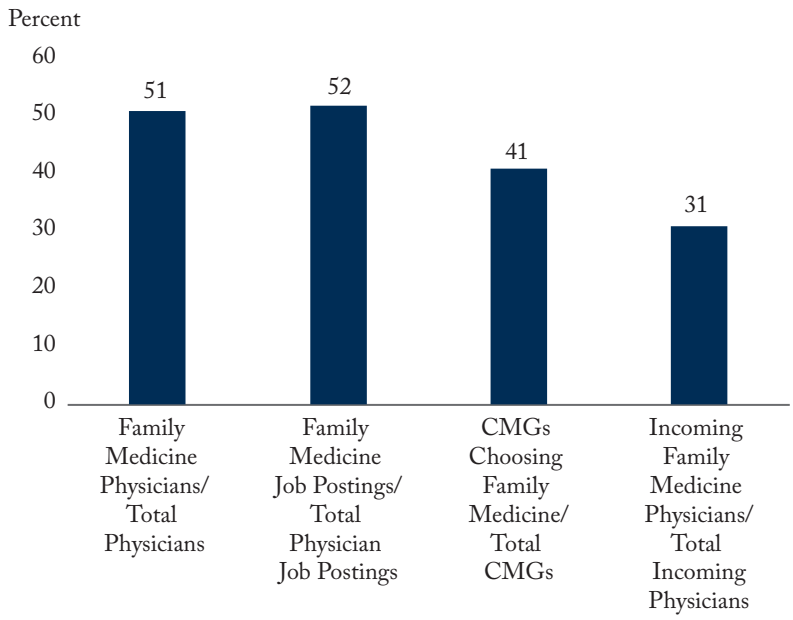
Psychiatry was the first choice of 205 CMGs in 2021, roughly in line with the number of psychiatrist training positions of 191 in 2020 and 207 in 2021. But in 2020, 322 job postings for psychiatrists were matched with only 191 qualified applicants while the comparable numbers for 2021 were 408 and 207, one of the largest gaps between available positions and occupational choices. This is especially worrying given the fact that Canadians suffering from mental health issues already experience particularly long wait times and are generally not considered well served.

Furthermore, if, as is likely, the small number of current and prospective geriatric and rheumatic disease specialists become consultants to primary care teams on how to care best for ageing patients, the clinical workloads of family physicians and nurse practitioners, already in short supply, will become heavier and the shortages more acute.

A new program at Queen's University focusing on training specialists in family medicine can potentially be a useful model to address supply shortages in this specialty (Box 1). Efforts in this

4 For many years, about 50 percent of physicians in Canada have been family physicians.

Figure 3: Fewer Medical Students Are Choosing Family Medicine, 2020/2021



Sources: Authors' calculations using CIHI, 2020; Canadian Medical Association, Physician Opportunities in Canada, 2021; Canadian Resident Matching Service, 2021.

regard will need to take into account the dramatic shifts in the characteristics of family medicine specialists, including a prominent increase in the share of women (Box 2).

Areas with Physician Surpluses: In contrast, physician surpluses appear to be building in some specialties. Given Canada's low birth rate, a surplus might be expected in paediatrics, yet there is no significant imbalance between job postings and newly qualified doctors or prospective entrants into the field. Potential surpluses are indicated in several sub-specialties of surgery (general, vascular, neuro, obstetrics and gynecology, ophthalmology, otolaryngology, and orthopedics) and medicine (cardiology, infectious disease, and respirology), and in diagnostic radiology. While the overall numbers tend to pale relative to family medicine, there were excesses of applicants over postings for 2019-2021 in all these specialties; similar mismatches, in total numbering up to hundreds, have applied over several years.

These may be examples of the need for deeper analyses of how such specialists are now being deployed. Patients' long wait times for surgery may be attributable to several factors, one being constrained hospital operating room capacities. Given the current experience with COVID-19 and the new-found threat of monkeypox, caution should also be exercised in forecasting a surplus of infectious disease specialists.

Imbalances for Personal Support Workers

Since COVID-19 began there has been increased awareness of the need for substantially more personal support workers (PSWs). Unfortunately, the absence of data makes it difficult to know even how many such workers are in the sector much less

Box 1: Queen's Program for Family Medicine Physicians

As discussed above, there are substantial job postings for family medicine physicians and 4.6 million Canadians over 12 years old who are without a regular primary care giver.[a] In Ontario, almost one-quarter of the 9.4 percent aged 12 and over without a regular primary caregiver provide the reason that no one is available in the area, or no one is taking new patients.[b] Family doctors account for 51 percent of the physician workforce, but only for 40 percent of those graduating[c] and the specialty choice of 31 percent of incoming medical students.[d] To mitigate this shortage, Queen's University, in collaboration with Lakeridge Health is creating 20 medical school seats that integrate classroom training and workplace experience in primary care settings.[e] This model addresses the family medicine physician shortage by identifying and prioritizing students entering medical school intending to practice family medicine. The curriculum involves an escalating role within a family health team resulting in the graduation of practice-ready physicians with the skills and competencies to provide community-based care needed by the people in their communities and regions.[f]

a CMA Physician Opportunities in Canada.
b https://www150.statcan.gc.ca/n1/pub/82-625-x/2020001/article/00004-eng.htm
c CMA Physician Opportunities in Canada.
d https://www.carms.ca/pdfs/2021-carms-forum.pdf
e https://healthsci.queensu.ca/stories/news-announcements/queens-university-and-lakeridge-health-establish-collaboration-address
f https://healthsci.queensu.ca/stories/news-announcements/queens-university-and-lakeridge-health-establish-collaboration-address

how many might be required to satisfy demand. CIHI has addressed the issues as follows:

> "Unregulated health care providers, such as personal support workers, play a large role in providing support to LTC residents. They make up a substantial portion of healthcare workers who assist with activities of daily living for one of Canada's most vulnerable populations. The lack of consistent, comparable pan-Canadian data for these care providers makes it difficult to better understand the LTC workforce. Some provinces are moving forward to close this data gap, including establishing new registries or using current ones to collect standardized data. CIHI will continue to work with the provinces and territories in helping to define information needs and to promote the standardized collection and reporting of these important data and information, all of which will support planning, policy development and the ability to respond to priority issues."[5]

5 https://www.cihi.ca/en/health-workforce-in-canada-highlights-of-the-impact-of-covid-19/the-impact-of-covid-19-on-canadas

Box 2: Dramatic Shift to Women in Family Medicine

In 1975, 11.3 percent of family medicine specialists were female.[g] Today, almost half are.[h] The growth rates in the number of family medicine specialists from 1975 to 2020 are 5.7, 1.2 and 2.3 percent, respectively, for women, men, and the total of all family doctors. A survey by the CMA in 2018 identified some of the implications for human resource planning of the shift to female physicians.[i] Pregnancy, childbirth and a prominent role in child-rearing can reduce the number of hours worked per physician, suggesting a larger overall number of workers is required. Women report much higher incidences of burnout and depression. Few supports are available to support the challenges for women in the sector. These rather direct effects on hours worked may be offset by other considerations. For example, one study[j] found female physicians spend longer with their patients during a contact and deal with more separate presenting problems in one visit. They also write fewer prescriptions.

g Canadian Institute for Health Information. Supply, Distribution and Migration of Physicians in Canada, 2020 – Historical Data. Ottawa ON: CIHI; 2021.
h Canadian Institute for Health Information. Supply, Distribution and Migration of Physicians in Canada, 2020 – Historical Data. Ottawa ON: CIHI; 2021.
i https://www.cma.ca/sites/default/files/2018-11/nph-survey-e.pdf
j https://human-resources-health.biomedcentral.com/articles/10.1186/1478-4491-12-32

The categorizations in the Statistics Canada job vacancy survey are not particularly helpful. PSWs would likely be captured in both "nursing and residential care facilities" and in "assisting occupations in support of health services." Vacancies in the latter category were 23,110 in the second quarter of 2022, up from 14,790 in the second quarter of 2019 and 7,695 in the second quarter of 2015. We see here a familiar pattern. Vacancies, extremely high now, jumped after 2019, but they were already high and longstanding prior to COVID-19.

We do not know the number of Canada's PSWs like we know the number of members of self-regulated professions such as physicians and nurses. Therefore, assessing demand and supply balances for PSWs is a wild guess. Little is known about this workforce despite compelling evidence that its services are essential and currently in great need. Most likely, shortages have existed for some time, are very large, have been growing rapidly, and will almost certainly grow even more to meet the needs, if not the demands of an ageing population.

As shown below in the section on international benchmarks, Canada has 37 percent fewer long-term care workers per person aged 65 and over compared to the median of OECD countries. As noted above, this total includes nurses and others as well as PSWs so caution must be exercised to not double count the supply of any occupation. In our estimation, closing that gap to the OECD median would require adding more than another 140,000 workers to the long-term care sector. That number will undoubtedly rise further as the cohort aged 75 and over doubles over the next few decades, a substantial proportion of which will be for PSWs.

Canada has a relatively small, under-serviced home-care sector. Developing and properly staffing home care would provide better health outcomes, greater satisfaction to older adults, and do so at a

lower cost than would an expansion of institutional long-term care. But were that to be done, the re-allocation would not change much the reality of the acute need for many more PSWs. In fact, it is likely that a shift to more home and community-based support and care would increase overall demand for PSWs and amplify that for other sorts of support workers who provide meals-on-wheels, transportation services, social programs, respite centres, et cetera. The workforce implications of shifting from institutional long-term care to other forms of support for the ageing population is something that would have to be examined in a comprehensive approach to health human resource planning.[6]

While job vacancy data give little insight into the PSW labour market specifically, a 2020 study by the Ontario Ministry of Long-Term Care reveals:[7]

- Of 100,000 workers in Ontario's LTC sector, 58,000 are personal support workers, 25,000 nursing staff and 12,000 allied health professionals and programming support;
- Counting institutional, home, and other work sites in 2018, there were a total of 100,000 PSWs in Ontario;
- Between 2016 and 2018 the number of students enrolled in PSW training programs declined;
- Attrition of PSWs is high in absolute terms and relative to other occupations. Forty percent do not enter the health-care sector on graduation or leave within a year; after five years only half remain in the sector;
- Overall job tenure declined between 2015 and 2017 prior to the onset of COVID.

SYMPTOMS OF SHORTAGES

Do Long Wait Times Reflect Physician Shortages?

The Commonwealth Fund has ranked Canada last among 11 developed countries surveyed on wait times for specialist care.[8] This may be the result of many factors of which physician shortage is but one.

The gaps between job postings for psychiatrists and fully qualified doctors and CMGs entering psychiatry training programs suggests shortages in that domain, as do the well-known difficulties patients with mental health problems have in their timely resolution. Despite psychiatrists (4,189)[9] being by far the most numerous of all but family medicine doctors in Canada, half of their patients wait at least 12 weeks to be seen following referral,[10] supporting a conclusion that they are in short supply. The same applies to some other specialties, such as physical medicine/rehabilitation and oncology, but not all, such as vascular surgery and neurosurgery.[11]

The Difficulty in Finding a Primary Caregiver Suggests a Shortage

Statistics Canada reported that 14.5 percent of

6 Federal and provincial governments have launched efforts to increase the number of personal support workers. For example, in the Fall 2020 Economic & Fiscal Update, the federal government committed $38.5 million over two years to support training up to 4,000 personal support worker interns through an accelerated 6-week online training program combined with a 4-month work placement. The aim: to address acute labour shortages in long-term care and home care. As an example of several provincial initiatives, the Ontario government made financial assistance available for up to 4,000 new PSW students enrolling at participating private career colleges between June 1 and September 30, 2022.

7 https://www.ontario.ca/page/long-term-care-staffing-study

8 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7292524/

9 https://www.cma.ca/sites/default/files/2019-11/2019-01-spec-prov_1.pdf

10 https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/Commentary_590_0.pdf

11 https://www.cdhowe.org/sites/default/files/attachments/research_papers/mixed/Commentary_590_0.pdf

Canadians aged 12 and over (roughly 4.6 million people) were without a primary care provider in 2019.[12] The same result was found in an update for 2021.[13] The 2019 survey provides some detail on the reason for the scarcity of primary care providers by province but not at the national level. To repeat, using Ontario as an example, 9.4 percent of the population aged 12 and over are without a primary care giver. Of those, one-quarter reported that the reason is none is available in the area or none in the area was taking new patients (Table 3). Some people choose not to align themselves with a physician or other primary caregiver, preferring perhaps to avail themselves of walk-in clinics as needed. But, as shown below, a significant share of people who needed and wanted a family doctor couldn't find one, ranging from 12.3 percent in Saskatchewan, to 45.8 percent of people in Nova Scotia, where in 2021 a record high of 88,300 were on a wait list.

International comparisons by the Commonwealth Fund show Canadians' access to primary care is inferior to most other high-income countries. Of 11 countries, Canada ranks 3rd worst in having a doctor or a regular place to go to for medical care and 2nd worst in ability to get a same-day or next-day appointment with a doctor or nurse.[14]

Employment Growth in the Health Sector

Despite reports of ER closures and gaps in the system, in line with rising job vacancies, employment has been increasing across the major health occupations over time.

Statistics Canada's Employment and Payroll Survey (SEPH) shows brisk growth in employment of health-sector workers before and during the pandemic (Table 4).[15] From the end of 2015 to the end of 2019, employment in the health sector grew at an annualized pace of 2.5 percent, significantly outstripping employment growth for all occupations combined. There was a significant increase in health workers per Canadian resident over the four years. This growth has continued since the pandemic struck.

Nevertheless, concerns about the adequacy of the supply of health workers have continued to increase, largely revolving around nurses and residential care workers. From December 2015 to December 2019, employment in nursing and residential care facilities grew at an annualized pace of 2.9 percent, somewhat faster than for all healthcare workers. Employment has continued to grow in this category during the pandemic, but much more slowly at 1.2 percent from December 2019 to July 2022. Still, the annualized growth rate over the entire period to July 2022 is an impressive 2.2 percent, outstripping growth in employment in all occupations and almost doubling the rate of growth in the population. Finally, employment in the whole health sector expanded 2.8 percent from December 2019 to July 2022, far outstripping growth in economy-wide employment and in population.

Strong Growth in Certified Healthcare Professionals

Similar to Canada's Employment and Payroll Survey (SEPH), CIHI data on professional certifications support the same story of continued

12 https://www150.statcan.gc.ca/n1/pub/82-625-x/2020001/article/00004-eng.htm
13 https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310009616
14 https://secure.cihi.ca/free_products/how-canada-compares-cmwf-survey-2020-chartbook-en.pdf
15 SEPH is a survey of establishments. Similar employment growth is evident in the Labour Force Survey (LFS), a survey of households. We present SEPH data here as the health workforce challenges are typically presented from an establishment (hospitals, long-term care institutions et cetera) perspective.

Table 3: Share of Population Aged 12 and Older without a Primary Healthcare Provider and Reasons Why, Canada, 2019

Province	Percentage of Canadians Aged 12 and Over Without a Primary Care Provider	Reasons for Not Having a Primary Care Provider	
		Felt They Did Not Need One But Had a Usual Place of Care, or Have Not Tried to Find One (percent)	No One Available in the Area or None Taking New Patients (percent)
Newfoundland and Labrador	12.5	47.4	40.0
Prince Edward Island	14.9	38.4	38.4
Nova Scotia	14.4	23.9	45.8
New Brunswick	10.2	31.4	43.9
Quebec	21.5	44.6	34.8
Ontario	9.4	46.8	24.1
Manitoba	15.8	61.7	12.7
Saskatchewan	17.2	67.8	12.3
Alberta	14.9	65.9	12.7
British Columbia	17.7	46.8	36.5
Canada	14.5	Not Available	Not Available

Source: Statistics Canada. Canadian Community Health Survey, 2019.

growth in the health system's workforce throughout the pandemic.[16,17]

The total of certified physicians and workers in nursing occupations has grown since 2016 significantly faster than the Canadian population (1.8 versus 1.2 percent), with some occupations growing considerably faster – nurse practitioners (8.9 percent), family physicians (2.2 percent), physicians collectively (2.3 percent) and specialists (2.4 percent). The growth rate for regulated nurses has been below that of physicians, but was still above that of the population (Table 5).

16 CIHI provides data from regulatory bodies/colleges on the number of certified healthcare professionals and the number in the workforce. To be counted as part of the workforce, the employee's professional occupation must relate to their education and training in health.

17 Caution is warranted in using the CIHI data as, among other issues, provinces and territories do not always report data, definitions may not be common across jurisdictions and jurisdictions change definitions on occasion. The data issues result in some volatility in annual comparisons that does not likely reflect what is happening. Nonetheless, the data provide valuable insights on general trends.

Table 4: Employment Growth in the Health Sector

	Annualized Growth Rates		
	December 2015 to December 2019	December 2019 to June 2022	December 2015 to June 2022
Healthcare	2.5	2.8	2.6
Ambulatory Healthcare Services	4.0	5.9	4.7
Offices of Physicians	2.2	1.1	1.7
Offices of Dentists	3.8	2.0	3.1
Offices of Other Health Practitioners	6.1	3.7	5.1
Out-patient Care Centres	2.9	14.8	7.4
Medical and Diagnostic Laboratories	2.7	2.9	2.8
Home Healthcare Services	5.6	2.9	4.5
Other Ambulatory Healthcare Services	6.3	16.3	10.1
Hospitals	1.0	1.1	1.0
General Medical and Surgical Hospitals	0.9	0.6	0.8
Psychiatric and Substance Abuse Hospitals	0.7	6.6	3.0
Specialty (except psychiatric and substance abuse) Hospitals	1.3	5.4	2.9
Nursing and Residential Care Facilities	2.9	1.2	2.2
Nursing Care Facilities	2.1	4.3	3.0
Residential Developmental Handicap, Mental Health and Substance Abuse Facilities	0.7	0.5	0.6
Community Care Facilities for the Elderly	5.6	-1.4	2.8
Other Residential Care Facilities	2.4	-3.2	0.2
Reference Data			
Industrial Aggregate Including Unclassified Businesses	1.8	1.2	1.6
Canada Population based on Population Estimates	1.4	0.9	1.2

Source: Authors' calculations using Statistics Canada, Survey of Employment, Payroll and Hours, Seasonally Adjusted, Table 14-10-0220-01.

Table 5: CIHI Healthcare Worker Supply Average Annual Growth Rate (percent)

	2016-2019	2019-2021	2016-2021
Physicians (Overall)	2.8	1.4	2.3
Physician – Family Medicine	2.8	1.3	2.2
Physician – Specialists	2.9	1.6	2.4
Regulated Nurses (Overall)	1.5	2.1	1.7
Regulated Nurses – Nurse Practitioners	8.4	9.6	8.9
Total of the 5 Occupations Above	1.7	2.0	1.8
Statistics Canada Annual Average Population Growth Rate			
	December 2015 – December 2019	**December 2018 – December 2021**	**December 2015 – December 2021**
Total Canada Population Estimate	1.4	1.0	1.2

Sources: Authors' calculations using CIHI Health Care Worker Supply, Statistics Canada Table 17-10-0009-01.

With the addition of provisional data for 2021, we have a clearer picture of what has happened to the supply of health professionals since the pandemic struck.[18] The growth rate for physicians overall and for family medical specialists has continued to grow since 2019, but at a considerably slower pace than from 2016 to 2019. In contrast, the supply of nurses has increased faster since 2019. Adding physicians and nurses together, the growth rate for their total supply has increased marginally since 2019 compared to the pace between 2016 to 2019. As with the employment data from the Survey of Employment, Payrolls and Hours, the rise in the job vacancy rate for health professionals and reports of dire shortages have occurred while the supply of registered professionals has been growing.

No Cause for Complacency: A cautionary note for future planning is that many new certified health workers since 2020 have been trained in a foreign country or are retirees returning to work, especially in the case of nurses (see Box 3). The heightened pace of new foreign-trained workers could continue for several years given the backlog and how many cases are presently in the process of certification.

Returnees from retirement are filling critical gaps at the moment, but they may not stay in the workplace for long given their prior retirement decisions and their advancing age. CIHI data show that much of the growth in the supply of health professionals in 2020 and 2021 came from those returning to practice from retirement or other departure. Registered nurses make up the category

18 CIHI provided the provisional 2021 data to the authors. It is scheduled to be published in November 2022. Caution is in order in interpreting the results as they are subject to revision.

with the largest number at 4,189 in 2020 and 8,290 in 2021; these numbers are illustrative only and are certainly understatements because for both years there are missing entries from some provinces and territories. Depending upon how the data are interpreted[19] returning nurses accounted for half to all the growth in the supply of registered nurses in 2020 and 2021. While the data are soft and in need of standardization, the message is crystal clear. To maintain the pace of registration increases, college and university programs will need to expand greatly to offset returning nurses leaving again over the next few years and the possibility of registrations of those foreign-educated eventually waning.

Factors Affecting Resources for the Healthcare Workforce

The high job vacancy rates and staffing shortages in the face of strong employment growth in the health sector led us to consider some factors that may impinge upon the effective supply of workers where they may be needed most.

Staff Moving Out of Direct Care

One of the anecdotal explanations heard of late for shortages of health workers is a shift away from direct care to other forms of work. CIHI publishes data on the percentage of selected health workers in direct care, in total and for major occupations. Registered health professionals provide "direct care" when they work in hospital settings, nursing home/long-term care facilities, or provide home and community care services. Most health professionals in each occupational group provide direct care, and no shift away from direct care is evident during 2020 or 2021 (Figure 4).

CIHI provided us with provisional numbers for 2021 (subject to revision) to permit a deeper dive for nursing. We use Total Regulated Nurses excluding Registered Psychiatric Nurses (RPNs) due to missing information on the latter in the CIHI data.

From 2016 to 2021. at least 90 percent of regulated nurses worked at a job consistent with their nursing education and training (Table 6).[20] More than 80 percent worked in direct care. The distribution of regulated nurses working in direct care has been reasonably stable across the work sites of hospitals, communities, nursing homes/LTC facilities and "other" sites. The shares in the first three categories have moved down somewhat with some increase in the "other" category, which includes, among other things, nursing agencies (Table 7).

19 It is not clear whether the figure for 2021 is to be interpreted as a flow or a stock. If the figure is of the nature of a flow, then it is appropriate to consider that in 2021 there were at least 12,479 registered nurses who had returned in 2021 or 2020 (if all those returning in 2020 had remained in 2021). That would account for 4 percent of all registered nurses in 2021. If the figures are stock in nature, then the 8,290 would still be a significant 2.7 per cent of all registered nurses. Another perspective is to look at the impact of returnees on the growth rate of licences. The number of registered nurses increased 4,127 in 2020 and 7,575 in 2021. Assuming there were no returnees in 2019 (no data are available), returnees would have accounted for all the total growth in registered nurses in 2020. If the data on returnees are of a stock nature, then returnees accounted for a bit more than half the growth in the total supply of registered nurses in 2021. If the data are of a flow nature, then returnees accounted for more than all of the total growth in the supply of registered nurses (The contributions to growth calculated for 2021 are likely overstated as British Columbia reported a figure for 2021 – which was 15 percent of the total for all provinces reporting – but did not report for 2020). It is likely that the data for 2021 are a mix of stock and flow as provinces posed the questions and tabulated the results differently.

20 CIHI advises the 2019 declines for the workforce and direct care may in part be due to data quality concerns, or availability of workforce and direct care related data.

Box 3: Ontario's Program to Certify Foreign-Trained Nurses

The College of Nurses of Ontario (CNO) had registered 4,728 internationally educated nurses (IEN) by July this year, surpassing the total registered in 2021 (3,235).[k] If that pace were to continue to as many as 10,000 for 2022 (see below) it would result in about a 5.6 percent increase in nurses in Ontario.[l] The number of registrants has increased within the last few years, significantly more than the 817 nurses registered in 2013[m] and an annual average of 1,476 from 2014 to 2017.[n] The Registered Nurses Association of Ontario estimates there are over 26,000 unregistered IENs in Ontario, 14,000 of whom are RNs.[o] Most unregistered IENs are working as PSWs in long-term care. Completion of their registration therefore would not fill workforce vacancies, but rather shift individuals between occupational categories.

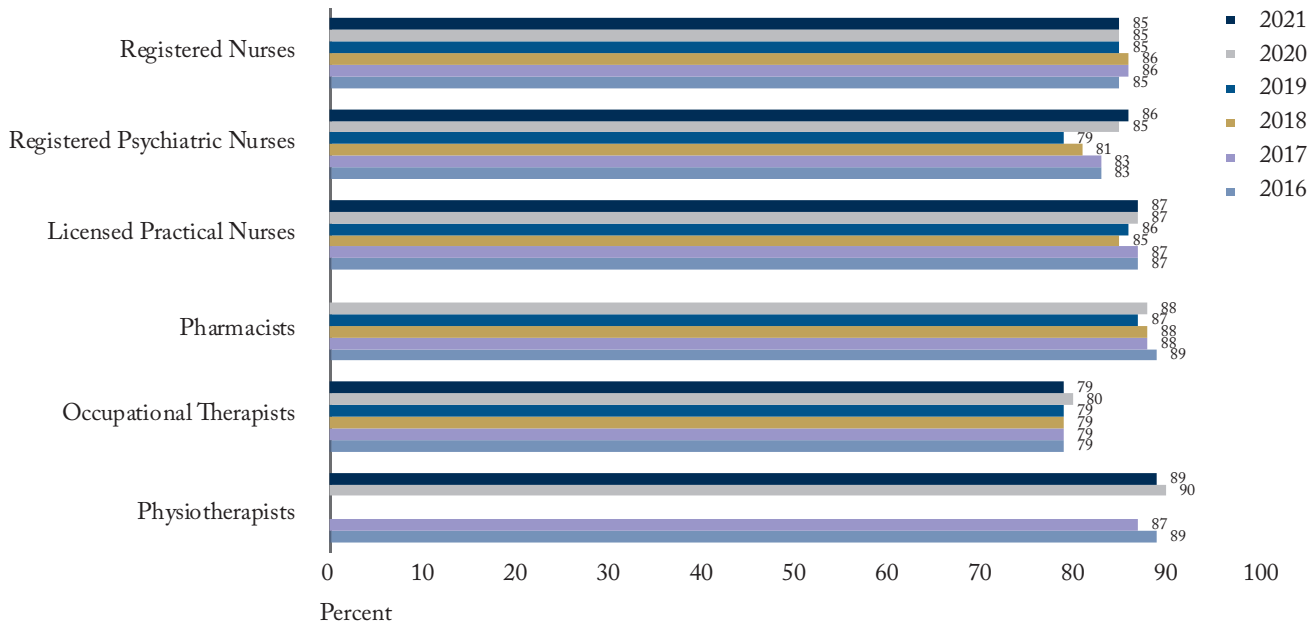
The CNO reports there are 10,273 active IEN applications in various stages of registration.[p] If applicants meet the requirements, they could be registered in a matter of weeks. If not, they will be directed to programs and courses that will help fill the gaps identified in their nursing knowledge and skills.[q] Recognizing the nursing shortage in Ontario, the CNO, together with the Ontario government, has modernized the application process to register IENs; in January it created the Supervised Practice Experience Partnership (SPEP) program which allows applicants to demonstrate evidence of their practice and language proficiency within the clinical setting, supervised by a nurse preceptor.

k https://www.cno.org/en/news/2022/august-2022/cno-helps-international-applicants-fill-the-gap/
l https://www.cno.org/en/what-is-cno/nursing-demographics/membership-totals-at-a-glance/
m https://www.cno.org/globalassets/docs/general/43011_trendsnewmembers.pdf
n https://www.cno.org/globalassets/2-howweprotectthepublic/statistical-reports/new-registrants-report-2021.html#New_registrations
o https://rnao.ca/news/media-releases/ontario-throne-speech-recognizes-nursing-crisis-but-budget-offers-baby-steps
p https://www.theglobeandmail.com/canada/article-ontario-health-care-minister-hospitals/
q https://www.cno.org/en/news/2022/august-2022/cno-helps-international-applicants-fill-the-gap/

The number of nurses in direct care working primarily in hospitals increased in 2021, but at the moderate pace of 1.6 percent. The number in nursing homes/LTC facilities fell 0.3 percent in 2021, following a modest increase in 2020. This compares to an annual average growth rate of 6.3 percent for 2020 and 2021 for other work settings; i.e., a shift to "other" work sites.

The data do not suggest nurses are leaving the workforce, nor that they are shifting away from direct care. But they do highlight a shift away from some institutions and some jobs, where they are arguably in great need, toward other work sites.

Figure 4: Percentage of Health Worker Supply in Direct Care



Notes: Activities not considered to be direct care include education, research, and administration. CIHI suppressed data for physiotherapists for 2018 and 2019 due to concerns over quality.

Source: CIHI Health Care Worker Canada.

Absences from Work

There are many references in the media to increased absences from work in the health sector during the pandemic. Statistics Canada measures the total days lost per worker in a year for full-time employees.[21] In health occupations, that increased from 16.1 days in 2019, to 20.8 in 2020 and down again to 17.2 in 2021. Assuming a normal work year of 250 days (the figure Statistics Canada uses), the increase in days lost per worker in 2021 relative to the pre-pandemic base of 2019 is a decline of 0.44 percent in the labour supplied over a year. That

21 We are aware of assertions that one of the reasons for the apparent shortages of nurses of late is a shift away from full-time work toward part-time and casual employment. Data through 2021 provided to the authors by CIHI do not support this but instead show a growing importance of full-time work. For provinces reporting data every year, the share of full-time work for regulated nurses (due to poor data quality or unavailable data, the following are excluded: NPs and RNs for Manitoba and Prince Edward Island; LPNs for New Brunswick, Yukon, Northwest Territories, Nunavut; RPNs for Yukon; and for direct care, the same aforementioned exclusions apply as well as exclusions of LPNs for Prince Edward Island and RPNs for all jurisdictions) rose from 57.8 in 2016 to 60.9 percent in 2021 while the shares for part-time and casual work declined from 31.0 to 29.6 percent and 11.3 to 9.5 percent, respectively. The same shift toward full-time employment and out of part-time and casual work is evident when considering only nurses in direct care. Further, the shift toward full-time employment within direct care nursing occurred across work sites including hospitals, long-term care, community and other.

Table 6: Regulated Nurses in the Workforce and Direct Care (excluding RPNs)

	Percentage of Supply in the Workforce*	Percentage of Supply in Direct Care
2016	94.0	85.4
2017	93.6	85.8
2018	93.3	85.4
2019	90.0	82.2
2020	90.5	83.2
2021	90.0	82.7

Notes: *For this purpose, being in the workforce means being employed in a job consistent with the nurse's education and training. A registered nurse working outside the health field would not be considered in the workforce from this perspective. In other words, not being in the workforce under this definition does not imply the registered nurse is unemployed.

Source: CIHI Workforce Database.

Table 7: Primary Place of Work of All Regulated Nurses in Direct Care (excluding RPNs)

Year	Total Regulated Nurses in Direct Care	Hospitals		Community		Nursing Home/Long Term Care Facilities		Other	
		Level	Percentage	Level	Percentage	Level	Percentage	Level	Percentage
2016	339,441	209,783	61.8	50,265	14.8	53,750	15.8	25,643	7.6
2017	344,693	213,014	61.8	51,385	14.9	54,104	15.7	26,190	7.6
2018	348,443	214,737	61.6	52,332	15.0	54,600	15.7	26,774	7.7
2019	354,843	218,043	61.4	53,696	15.1	56,031	15.8	27,073	7.6
2020	362,696	222,168	61.3	55,433	15.3	56,598	15.6	28,497	7.9
2021	369,706	225,758	61.1	56,946	15.4	56,410	15.3	30,592	8.3

Source: Authors' calculations using CIHI Workforce Database.

certainly offsets a significant share of the increase in employment; however, even after accounting for the higher absences, the supply of health-sector workers increased.

Notably, the 16.1 days lost in health occupations in 2019 compares to 10.3 days for all occupations (Table 8). The higher absences in health, persistent as they have been in recent years well before the pandemic, are a factor to consider in human resource planning along with the needed supply of workers and particularly the working conditions in the sector; the latter may well be a leading cause of abnormally high absences.

Factors Affecting Demand for Healthcare Services

Above we have documented that the supply of human resources in the health sector has been increasing. Now we turn to the role demand may have played in creating the imbalances that appear in the job vacancy data and in accounts from segments of the health sector.

Demographic Factors

From December 2019 to June 2022, the Canadian population increased at an average annual rate of 1.2 percent. *Ceteris paribus*, that should translate into an equivalent growth in the demand for health services. CIHI estimates that population ageing adds 0.9 percentage points to the growth of healthcare spending per annum.[22] Combining population growth with ageing means the demand for services is growing a bit faster than 2 percent per annum. Growth in the supply of health-sector workers at a similar pace would, in essence, keep service levels flat. As presented in the sections above on the supply of health-sector workers, growth in employment and certification has outstripped population expansion. The gap is much narrower, however, when population ageing is also considered.

Impact of COVID-19

In this section, we use different sources and various areas of healthcare to assess the impact of COVID-19 on the healthcare system.

Hospitals:

A CIHI study on COVID-19 and hospitals[23] found that:

- from April to December 2021, there were more than 53,080 hospital stays in Canada (excluding Quebec) for patients with a diagnosis of COVID-19;
- During the same period and jurisdictions, more than 144,970 Emergency Department (ED) visits for COVID-19 were reported;
- From January 2020 to March 2021, there were more than 65,615 hospital admissions and 158,860 ED visits (data updated February 3, 2022, to include hospitalizations from Quebec);
- More than 1 in 4 (26 percent) hospital admissions included an intensive care unit (ICU) stay.

The 53,083 hospitalizations due to COVID-19 should be put in the context of more than 1 million hospital visits (excluding Quebec) over two-thirds of a "normal year," effectively a bit more than a 4 percent increase. That is certainly significant. The pressure on the low-capacity ICU sub-sector is especially noteworthy. However, CIHI notes other factors lowered hospitalizations, such as

22 CIHI. "National Health Expenditure Trends 1975-2019." https://www.cihi.ca/sites/default/files/document/nhex-trends-narrative-report-2019-en-web.pdf

23 https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/physician-services#:~:text=Initially%2C%20surgeons%20were%20more%20affected,(this%20varied%20by%20province

Table 8: Work Absence of Full-Time Employees in a Year

	Days Lost Per Full Time Worker Per Year (250 working days per year)			Change in Days Absent as Share of Working Days (percent)		
	2015	2019	2021	2015-2019	2019-2021	2015-2021
Total All Occupations	8.9	10.3	N.A	0.6	N.A	N.A
Health Occupations	13.8	16.1	17.2	0.9	0.4	1.4
Professional Occupations in Nursing	16.6	17.7	17.3	0.4	-0.2	0.3
Professional Occupations in Health (except nursing)	5.4	5.8	8	0.2	0.9	1.0
Technical Occupations in Health	11.4	16.3	16.2	2.0	0.0	1.9
Assisting Occupations in Support of Health Services	17.8	19.4	23	0.6	1.4	2.1

Sources: Authors' calculations using Statistics Canada. Labour Force Survey. Table 14-10-0285-01.
Statistics Canada archived tables for 2015 and 2019. See: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410019001&pickMembers%5B0%5D=2.1&pickMembers%5B1%5D=3.7&cubeTimeFrame.startYear=2015&cubeTimeFrame.endYear=2020&referencePeriods=20150101%2C20200101. Table 14-10-0190-01.

postponements of surgeries, fewer other illnesses due to COVID-19 protocols such as masking and social distancing. In total, hospitalizations went from 2,359,324 in 2019-2020 to 2,116,880 in 2020-2021 for a decline of 10.3 percent. The number of days of hospitalizations declined a similar 10.7 percent; on average people were not remaining longer in hospital.

The hospitalization data do not reveal an overall increase in demand for services at these institutions although there has been a shift toward ICU units. The human resource need in ICUs is heavy and expensive; according to CIHI a COVID-19-related hospitalization with ICU admission is estimated to cost over $50,000, more than three times the cost of a hospital stay without an ICU admission.

Alternate Level of Care (ALC) Load in Hospitals:

Alternate level of care (ALC) describes patients who occupy hospital beds but do not require the intensity of services provided. Decreasing the number and duration of ALC stays was a strategy to free hospital resources to accommodate COVID-19 cases but the strategy was not implemented. A CIHI study found the incidence of ALC cases in hospitals increased slightly over the COVID-19 period studied. Overall, for 2020-2021, CIHI reports 16.9 percent of patient days, or more than 2.7 million days, were in ALC.[24] Ontario Health Association data show how ALC reflects waiting lists for other sites of care. Of the 5,800 ALC patients in Ontario hospitals in mid-January 2022, 43 percent were waiting for

24 https://www.cihi.ca/en/hospital-stays-in-canada

institutional long-term care, 14 percent for home or community care and 12 percent for supervised or assisted living.[25]

Family Doctors:

As part of its special COVID-19 study, CIHI looked at "activities" (visits, consultations, psychotherapy, deliveries and procedures provided by family physicians, medical specialists, and surgeons) since 2019. Physician activity dropped in early 2020, then returned to the 2019 level through early 2021. Only in the last month of the study period, March 2021, did physician activity rise an average of about 7 percent above the 2019 base across the five jurisdictions reporting (Table 9).[26] The most remarkable change was the shift to virtual care, from being almost non-existent in early 2020 to around half of all activities during the COVID period.

Reconciling the Available Data and the Sense of Crisis at Hospitals

Data available from CIHI, Statistics Canada and other sources tend to be aggregated at a high level. At the most general level, they do not suggest that the gap between growth in the supply and growth in demand for human resources in the health sector is compatible with the cries of crisis in the media, even collapse. Diving as deeply as these data permit provides some clues as to a reconciliation. These include only modest growth in the increase in nurses in hospitals, a slight decline in 2021 in nurses in long-term care, and some increase in job absences. Still, there is a chasm between the data available and the reality being expressed, especially by hospitals. A proper human resource planning strategy would develop more disaggregated data to peer into this chasm. In the meantime, consultations with players in the sector should be done to determine what is happening "on the ground."

We complemented our data-based analysis with consultations with senior management at two Ontario hospitals. The narrow base for the consultations suggests our observations should be treated as illustrative only. The managers of both hospitals referred to the increased human resources needed to serve their share of the 3,100 bed increase announced by Ontario (an 18 percent rise).

The increased resources required due to population aging may have been underestimated, based on CIHI's estimate of the impact on spending. They repeated anecdotes about the shortages of nursing staff, but averred that the challenges are nuanced in ways that slip below the radar screen of the aggregated data. They pointed out, for example, that a recent nursing graduate is not a full substitute for a more experienced departed worker. The nursing shortages are acute in specific areas of direct care including intensive care units, emergency departments and medical/surgical in-patient wards. This suggests we must be able to peer into the "direct care" box to examine its components. Hospitals are finding experienced nurses are shifting away from these critical areas for other positions offering them better work-life balances. They are limited in what they can offer nurses as incentives to remain in these high patient-contact positions.

The Money Factor: Are Wages Responding to Demand?

Economics suggests that when demand for something exceeds supply, the price will rise. In this case, if the demand for health workers exceeds supply, wages (and other conditions of

25 "Applying Lessons Learned During COVID-19 to Build a Stronger Health System for Ontario, April 2022."
26 Calculated by the authors using provincial populations as weights.

Table 9: Change in Physician Activity During the COVID-19 Pandemic from Pre-Pandemic Level

Month	Nova Scotia	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Monthly COVID-19 Community Cases (All of Canada)
	Percent						
March 2020	-11	-17	-1	-11	-12	-7	8,533
April 2020	-34	-42	-27	Not available	-35	-26	44,688
May 2020	-36	-36	-17	Not available	-29	-22	37,711
June 2020	-14	-14	4	Not available	-6	3	13,257
July 2020	-11	-12	1	-3	-7	1	12,108
August 2020	-7	-6	1	-3	-6	1	12,636
September 2020	0	-3	4	0	-2	7	29,810
October 2020	-2	-5	-1	-5	-8	1	76,686
November 2020	-6	-4	0	-4	-5	5	142,695
December 2020	2	-4	-1	-4	-6	7	203,288
January 2021	-11	-12	-3	-12	-8	Not available	198,426
February 2021	-1	-2	5	-3	1	Not available	87,841
March 2021	11	6	14	0	8	Not available	114,416

Note: January to December 2019 data used for pre-pandemic baseline levels.

Source: CIHI. " COVID-19's Impact on Physician Services."

https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/physician-services#:~:text=Initially%2C%20surgeons%20were%20more%20affected,(this%20varied%20by%20province)

employment) should rise to attract new workers and retain those already in the field. There may be lags in the reaction, however, due to the presence of multi-year labour contracts. Also, health is a highly regulated sector where government policy may for a while override economic forces. An example is the imposition in Ontario of a 1 percent annual wage increase for all civil servants, including those in the health sector, from 2019 to 2022. Most provincial governments are also trying to rein in their deficits and lower their debt burdens following the economic and fiscal shock of COVID; this may be leading to wage restraint.

In the health sector, average weekly earnings including overtime increased at an annualized pace of 2.0 percent from July 2015 to July 2019, a bit stronger than the pace across all occupations and around the rate of CPI inflation (Table 10). The annualized pace of earnings growth picked up to 2.8 percent in health occupations from July 2019 to July 2022, but this was below that of 4.2 percent across all occupations. The pick-up in earnings growth of late is particularly pronounced for nursing and in residential care facilities where the annualized pace of 0.9 percent from July 2015 to July 2019 jumped to 7.3 percent from July 2019 to July

Table 10: Annualized Growth Rate of Average Weekly Earnings With and Without Overtime

	July 2015 – July 2019		July 2019 – July 2022		July 2015 – July 2022	
	Including Overtime	Excluding Overtime	Including Overtime	Excluding Overtime	Including Overtime	Excluding Overtime
Industrial Aggregate Excluding Unclassified Businesses	1.7	1.7	4.2	4.1	2.8	2.7
Healthcare*	2.0	1.8	2.8	2.4	2.4	2.0
Ambulatory Healthcare Services	3.0	2.8	1.7	1.6	2.4	2.3
Offices of Physicians	7.7	7.4	-0.8	-0.8	4.0	3.8
Offices of Dentists	0.6	0.6	3.1	3.0	1.7	1.6
Offices of Other Health Practitioners	2.5	2.4	4.2	4.1	3.2	3.2
Out-patient Care Centres	1.1	0.9	1.2	1.3	1.1	1.1
Medical and Diagnostic Laboratories	0.8	0.8	2.0	1.8	1.3	1.2
Home Health Care Services	2.2	2.0	6.0	5.7	3.8	3.6
Other Ambulatory Healthcare Services	2.5	1.8	-0.7	-0.6	1.1	0.7
Hospitals	2.5	1.8	2.1	1.5	2.1	1.7
General Medical and Surgical Hospitals	2.1	1.9	1.7	1.1	2.0	1.5
Psychiatric and Substance Abuse Hospitals	n/a	n/a	n/a	n/a	5.0	4.5
Specialty (except psychiatric and substance abuse) Hospitals	2.7	1.8	2.3	3.0	2.5	2.3
Nursing and Residential Care Facilities	0.9	0.7	7.3	6.7	3.6	3.2
Nursing Care Facilities	1.0	0.9	7.2	6.3	3.6	3.2
Residential Developmental Handicap, Mental Health, and Substance Abuse Facilities	2.8	2.5	6.4	6.0	4.4	4.0
Community Care Facilities for the Elderly	0.3	-0.02	8.7	8.2	3.8	3.4
Other Residential Care Facilities	0.1	-0.2	4.8	4.7	2.1	1.9

Note: *Authors' calculations using weights in employment to separate health from health and social services wage increases.

Source: Statistics Canada, Survey of Employment, Payrolls and Hours, Table 14-10-0203-01.

Table 11: Proportion of Earnings Overtime (percent)

	July 2015	July 2019	July 2022
Industrial Aggregate Excluding Unclassified Businesses	2.7	2.4	2.8
Healthcare*	1.7	2.7	3.8
Ambulatory Healthcare Services	0.6	1.4	1.5
Offices of Physicians	0.4	1.4	1.4
Offices of Dentists	0.3	0.5	0.7
Offices of Other Health Practitioners	0.2	0.6	0.7
Out-patient Care Centres	0.8	1.7	1.4
Medical and Diagnostic Laboratories	0.4	0.6	1.2
Home Healthcare Services	0.6	1.3	2.0
Other Ambulatory Healthcare Services	2.1	5.0	4.7
Hospitals	2.3	3.4	5.1
General Medical and Surgical Hospitals	2.4	3.3	5.2
Psychiatric and Substance Abuse Hospitals	1.9	n/a	5.6
Specialty (except psychiatric and substance abuse) Hospitals	2.3	5.7	3.6
Nursing and Residential Care Facilities	1.4	2.4	4.1
Nursing Care Facilities	1.9	2.4	4.9
Residential Developmental Handicap, Mental Health, and Substance Abuse Facilities	0.6	2.0	3.2
Community Care Facilities for the Elderly	1.4	2.5	3.9
Other Residential Care Facilities	0.9	2.2	2.5

Note: *Authors' calculations using weights in employment to separate health from health and social services wage increases.

Source: Statistics Canada. Survey of Employment, Payrolls and Hours. Table 14-10-0203-01.

2022. However, wage gains in hospitals have been particularly modest; 2.1 percent at an annualized rate since July 2019.

To detect whether wages are being bid up due to an excess of demand over supply for health-sector workers, overtime should be netted out of earnings' gains. Overtime has become a more important component of earnings across all occupations since July 2019, and considerably more so in the health sector, particularly in hospitals (Table 11).

From July 2019 to July 2022, the gap in earnings' growth between healthcare and all occupations grows once overtime earnings are stripped out. Earnings, net of overtime, in healthcare have grown at an annualized pace of 2.4 compared to 4.1 percent for all industries. Only nursing

shows significant gains in wages. Note the modest earnings growth of 2.1 percent for hospitals slips to just 1.5 percent when overtime is excluded (Table 10). The much greater use of overtime combined with very modest increases in regular pay may explain part of the apparent growing discontent currently among workers in direct care at hospitals.

As job vacancies in the health sector rise it is interesting to see if the wages offered for the vacant positions are being bid up in an effort to attract more workers. The offered wage for vacancies grew at more than double the pace from the second quarter of 2019 to the second quarter of 2022 relative to the pace from the second quarter of 2015 to the second quarter of 2019 (Table 12). Of course, the rise in wages reflected to a degree the increase in inflation, not just tightening of the labour market. The pace of wage growth increased as well for healthcare and social assistance but, apart from ambulatory healthcare services, the rate of wage growth since the end of 2019 has been lower than for all industries. Wage offerings for vacant positions have been particularly modest in the hospital sector, well below that of all industries and the rate of inflation.

In conclusion, wages have not been rising appreciably in the health sector. Much of the gains that have been recorded simply reflect the greater use of overtime. Wage gains have been especially modest in the hospital sector, falling substantially in after-inflation terms.

International Comparisons for the Supply of Healthcare Workers

In this section, we present data on the number of healthcare workers in OECD countries relative to their respective populations. General inferences only should be drawn from the comparisons; the variations are large for total health-sector work forces and the mix of occupations varies greatly from country to country. Our comparisons focus on countries with some elements in common with Canada in and the G7; given the wide data distributions across the OECD, we tend to use medians rather than averages.

a) Total Health and Social Sector:

Canada ranks second last among G7 countries in terms of health and social employment per 1,000 residents. To reach the median (the United Kingdom) Canada would need to add almost 200,000 workers.

Even within the G7, it is difficult to make comparisons that are meaningful for Canada. Japan and Germany have older populations that, *ceteris paribus*, require a high density of health-sector workers (Table 13). The United States is an outlier in that it spends so much more on healthcare than any other OECD country. At the other end, Italy has a poorly developed health sector Canada would also not wish to emulate. This leaves only the United Kingdom and France as somewhat comparable to Canada. Almost 200,000 workers would need to be added to reach the intensity of health and social sector workers per capita in the United Kingdom; and in France somewhat over 100,000. It could be argued that Canada needs a higher intensity of healthcare workers relative to the United Kingdom and France due to Canada's population being spread over a much larger geographical area.

b) Physicians: With respect to the supply of physicians, the range in the OECD[27] goes from a low of 2.0/1000 (Turkey) to 5.5 (Austria); the median is 3.5. At 2.8 doctors per 1,000, Canada is

27 https://data.oecd.org/healthres/nurses.htm

Table 12: Average Offered Hourly Wage ($) and Average Annual Growth Rate (percent)

	2015:Q2	2019:Q2	2022:Q2	Average Annual Growth Rate (*percent*)		
				2015:Q2-2019:Q2	2019:Q2-2022:Q2	2015:Q2-2022:Q2
Total, All Industries	18.75	21.30	24.05	3.2	4.1	3.6
Health Care*	24.26	24.76	27.01	0.5	1.4	2.9
Ambulatory Health Care Services	23.90	24.50	29.25	0.7	6.1	3.0
Hospitals	28.35	28.00	29.60	-0.3	1.9	0.6
Nursing and Residential Care Facilities	19.45	20.50	22.75	1.3	3.5	2.3

Note: *Authors' calculations using weights in employment to separate health from health and social services wage increases.

Source: Statistics Canada. Job Vacancy and Wage Survey. Table 14-10-0326-02.

Table 13: Health and Social Employment Per Capita in G7 Countries

Country	Health and Social Employment (*per 1,000*)	Median Age of Population
Germany	74	44.8
Japan	69.8	48.7
United States	62.6	37.9
United Kingdom	60.7	39.8
France	58.4	41.8
Canada	55.5	40.4
Italy	33.6	47.3

Note: Based on latest year of available data (2019-2021). Health and social employment.

Source: OECD. Health care resources. Median age source: United Nations Data Portal.

20 percent below that, but the comparison is not very meaningful given the very different healthcare systems, geography, and other factors.[28] Among the G7, moving to the median 3.2 for United Kingdom in Table 14 would require the addition of slightly more than 15,000 physicians in Canada.

c) Nursing: Canada has the same nursing positions per capita (10.1/1,000) as the OECD median (10.1). The range extends from 2.7 in Turkey to 18.4 in Switzerland.[29] However, getting to the median of the G7 (11.3, France) would require adding just over 45,000 nurses. In the case of nurses, we observe some commonality across the G7, with Japan, Germany, the United States and France all having between 11.3 and 12.1 nurses per 1,000 population (Table 15).

d) Long-term Care: For long-term care workers, who are a poorly defined admixture of nurses and PSWs, the OECD does not provide data for the United Kingdom and France. In Table 16, we look at the range of the 21 OECD members for which data are available. The median is 54 workers per 1,000 people aged 65 and over. At 34, Canada is 37 percent shy of that median. Canada would need to add slightly more than 140,000 workers to close the gap. Above we noted an Ontario report estimates 58 percent of the workers in long-term care in that province are PSWs. If we apply this portion to the international data, then PSWs would make up 81,200 of the additional workers needed to get to the OECD median.

It is generally acknowledged the best support systems for the elderly are found in Northern Europe. To provide support and care to 1,000 people aged 65 plus, Sweden has 116 workers in long-term care, the Netherlands 78 and Denmark 76 – all well over double the resource intensity in Canada.

Table 14: Physicians per 1,000 Inhabitants in G7 Countries

Germany	4.5
Italy	4.1
France	3.4
United Kingdom	3.2
Canada	2.8
United States	2.6
Japan	2.6

Note: Based on latest year of available data (2019-2021).

Source: OECD. Doctors (indicator) https://data.oecd.org/healthres/doctors.htm#indicator-chart

Table 15: Nurses per 1,000 Inhabitants in G7 Countries

Germany	12.1
Japan	12.1
United States	12.0
France	11.3
Canada	10.1
United Kingdom	8.7
Italy	6.6

Note: Based on latest year of available data (2019-2021).

Source: OECD. Doctors (indicator) https://data.oecd.org/healthres/doctors.htm#indicator-chart

28 For example, Italy has a relatively high number of doctors per capita but a small number of nurses. Clearly the application of scopes of practice is different there than in other countries.

29 https://data.oecd.org/healthres/nurses.htm#indicator-chart

Future Problems Are Emerging

By 2041, the number of Canadians aged 75 and over is expected to have grown by 3.5 million.[30] This, coupled with the older age profile of current practitioners[31] and the very modest intake of new trainees into geriatric medicine, rheumatology, rehabilitation medicine, and other specialties focused on diseases of the elderly, points to a serious problem. It is compounded by a yawning, ill-defined but apparently worsening shortage of PSWs and other health support workers. In 2021, there were only 33 qualified potential candidates for geriatric medicine and 38 for rheumatology. One suggested response, also referred to above, has been that more responsibility for care of the ailing elderly be shifted to family physicians and nurse practitioners. But their supply is already insufficient to meet existing demand. Furthermore, training would require substantial re-focusing to incorporate far more education and experience for family practitioners in care of the elderly.

Given especially the advent of team practices and other manifestations of Accountable Care Organizations/Integrated Care Systems[32] substantial refocusing will also be required for curricula and training to include more experience working with social service organizations and providers, broadening the concept of care teams to incorporate health support services as well

Table 16: Formal LTC Workers per 1,000 Inhabitants Aged 65 Years and Over in OECD Countries

Norway	120
Sweden	116
Israel	112
Switzerland	84
Netherlands	78
Denmark	76
Australia	73
Luxembourg	73
New Zealand	68
Japan	67
Estonia	54
Germany	54
Spain	49
United States	48
Korea	45
Austria	41
Ireland	36
Canada	34
Hungary	19
Portugal	18
Slovak Republic	14

Note: Based on latest year of available data (2018-2021).
Source: OECD. Long-Term Care Resources and Utilization. https://stats.oecd.org/Index.aspx?DataSetCode=HEALTH_LTCR

30 Canada's total population should continue growing at a moderate pace. In Statistics Canada's medium scenario released August 2022 (https://www150.statcan.gc.ca/n1/daily-quotidien/220822/dq220822b-eng.htm), the average annual growth in the total population is 1.0 percent 2021 to 2043. *Ceteris paribus*, this would require a commensurate increase in health-sector workers. Ageing requirements would be additional.

31 One-third of geriatric specialists are 55 or older. https://www.queensu.ca/sps/sites/webpublish.queensu.ca.spswww/files/files/Publications/Ageing%20Well%20Report%20-%20November%202020.pdf

32 Referred to also as Integrated Care Systems (ICS) and Ontario Health Teams (OHT). Applied more broadly across Canada, the preferable terms may be Integrated Care and Support Systems (ICSS).

as care. This will apply particularly to mental health services, where it will involve engaging psychologists, counselors, social, and other community workers in addition to psychiatrists.

Another area of growing concern is pain management. In 2019, there were only 18 pain medicine specialists in Canada.[33][34] Considering the current opioid crisis together with the prevalence of pain as an enduring symptom of the rheumatic conditions common among the elderly, this is alarming.

COVID-19 has brought heightened awareness of the importance of public health. We have not seen the last of epidemics. Drummond and Sinclair have argued for a re-balancing within the health sector, adding the promotion of good health to the current almost singular focus on the restoration of ill health.[35] In that context, it is also disturbing that in 2019 there were only 503 specialists in public health and preventative medicine and 378 in infectious diseases.[36]

A Statistics Canada survey taken September to November 2021 may seem to send some more ominous signals about future shortages of health workers.[37] Among healthcare workers not intending to retire, 17.9 percent stated that they intend to leave their current job or change jobs within the next three years (Table 17). The National Physician Health Survey by the CMA indicated 49 percent of physicians are likely to reduce or modify their clinical hours in the next two years.[38]

Table 17: Percentage of Healthcare Workers Intending to Leave Their Current Job or Change Jobs Within the Next Three Years (percent)

Healthcare Sector	17.9
Nurses	24.4
Personal Support Workers or Care Aides	16.4
Physicians	11.1
Other Healthcare Workers	13.6

Source: Statistics Canada. Experiences of healthcare workers during the COVID-19 pandemic, September to November 2021.

The data do not necessarily imply the respondents intend to leave the health sector or even the sub-sector in which they currently work. General surveys often indicate a high percentage of people expressing their intention to change jobs. For example, a survey by Ipsos for Randstad Canada found 43 percent of Canadians said they are likely to look for a new job in the upcoming year.[39] Yet the actual job-changing rate is less than 1 percent (monthly) and has not changed significantly over the past 6 years.[40]

Nonetheless, in the interest of retaining the supply of health workers, managers need to pay to sources of concern that lead to attrition, including a desire to change jobs and its reasons such as job stress (Table 18).

33 Other medical professionals practice pain management in multidisciplinary clinics.
34 https://www.cma.ca/sites/default/files/2019-11/2019-01-spec-prov_1.pdf
35 See, for example, https://www.cdhowe.org/intelligence-memos/drummond-sinclair-fixing-medicare-ii
36 https://www.cma.ca/sites/default/files/2019-11/2019-01-spec-prov_1.pdf
37 https://www150.statcan.gc.ca/n1/daily-quotidien/220603/dq220603a-eng.htm
38 https://www.cma.ca/sites/default/files/2022-08/NPHS_final_report_EN.pdf
39 https://www.benefitscanada.com/news/bencan/43-of-canadian-workers-considering-looking-for-a-new-job-in-2022-survey/#:~:text=in%202022%3A%20survey-,43%25%20of%20Canadian%20workers%20considering%20looking%20for,new%20job%20in%202022%3A%20survey&text=Around%20four%20in%2010%20(43,by%20Ipsos%20for%20Randstad%20Canada
40 https://www150.statcan.gc.ca/n1/daily-quotidien/220311/dq220311a-eng.htm

Finally, likely future developments may well increase the demand/need for nurses, therapists, and personal support workers. If higher educational and broader training programs together with increased clinical teamwork lead, as they should, to an expansion of the licensed scopes of practice of many health professionals, the functions performed by nurses and others may well increase significantly. Population ageing will likely increase the demand for therapists, especially if there is a concerted effort to keep Canada's older population healthier, preventing or delaying the onset of frailty and dementia.[41] Integrated Care Systems offering coordinated, comprehensive care and support should also increase the demand for therapists and community support workers as part of the overall thrust to promote health. "Ageing Well" (Drummond, Sinclair and Bergen 2020) documented how Canada's spending of 1.3 percent of GDP on long-term care has been well below the OECD average of 1.7 percent.[42] That report predicted current efforts to address long-term care problems, such as through training more and better staff and creating infrastructure and safety protocols, would increase spending to 2.1 percent of GDP. Those changes, together with doubling of the 75-plus age cohort, if *status quo* protocols prevail, would drive long-term care spending to 4.2 percent of GDP. The recommended alternative is to put more resources into home-based support, substantially increasing the number of better-trained PSWs and reallocating them to home care – altogether a lower cost option and also more in line with the revealed preferences of seniors.

Table 18: Reason for Healthcare Workers Wishing to Change Jobs (percent)

Job Stress or Burn-out	63.2
Job Stress or Burn-out – Nurses	70.9
Concerns Over Mental Health and Well-Being	53.0
Lack of Job Satisfaction	48.8

Source: Statistics Canada. Experiences of healthcare workers during the COVID-19 pandemic, September to November 2021.

Despite Family Health Teams having been in existence in Ontario and elsewhere for more than 15 years, most of the data remain concentrated on family physicians. Although some information is coming available on nurse-practitioners, both working independently and teamed with physicians and others;[43] little is available on the work of other team members to augment the productivity of their teams. Greater insight is needed on whether members of teams collaborate effectively to serve their community's health needs and the degree to which access to timely primary care is being improved.[44] More generally, there should be more intense study and documentation on the overall productivity and administrative efficiency of teams.

The causes of the supply-demand imbalances reviewed in this report all require study and documentation. It is remarkable, given its importance and concern to the many organizations involved,[45,46] that health human resource planning continues to be unstudied

41 https://www.cfn-nce.ca/frailty-matters/avoid-frailty/
42 https://www.queensu.ca/sps/sites/spswww/files/uploaded_files/publications/1%20Ageing%20Well%20Report%20-%20November%202020.pdf
43 https://www.tandfonline.com/doi/full/10.1080/13561820.2021.1874896
44 https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-021-06595-x
45 https://www.cdhowe.org/intelligence-memos/drummond-sinclair-why-health-human-resource-planning-not-happening
46 https://www.longwoods.com/content/16952/healthcare-quarterly/steering-and-rowing-in-healthcare-the-devolution-option

and relatively neglected. No national body exists with responsibility for its pursuit, and little is being done in Canada's provinces and territories where primary responsibility for health services rests constitutionally.[47] Attempts are underway to accelerate the formation of Accountable Care Organizations/Integrated Care Systems in Ontario[48] and other provinces and territories. These organizations must, in the end, discharge the responsibility to optimize the health of the population each serves, but it is too early in their development for them to take leadership in health human resource planning, vital as doing so soon is to their success.

Correcting the current supply-demand imbalances can only begin by understanding why they developed and persist. Are pay differentials between family practice, geriatrics, and other less popular specialties the prime reason why increasing shortages are forecast? Why is the retention of personal support workers in their field so short? Is it a fundamental absence of respect for the value of their work? Although COVID-19 has created severe stresses on nurses, PSWs, and other institutional employees, especially given the dominance of women in those occupations with concomitant child-care responsibilities, what explains the shortages evident before COVID-19? Could changes in the recruitment of students, educational curricula and training programs provide solutions? Would stronger promotion of the formation of ACO/ICSs be a catalyst to achieve both greater productivity and mutual respect among health and healthcare team members? How might that be implemented? What are the roadblocks to expanding the scopes of practice of a wide variety of health workers? There are many such questions to answer, and quickly, to meet the needs of Canadians.

Expanded Scopes of Practice: The Answer to Worker Shortages?

There is no single answer, but there is no question that Nurse Practitioners (NP) and in the United States, Physician Assistants (PA),[49] provide good evidence of how expanding scopes of practice commensurate with health workers' contemporary education and clinical experience offers great promise in increasing the accessibility, quantity, and productivity of health's care and support. NPs are registered nurses with additional education and licensure allowing them to diagnose and treat illnesses, prescribe medications, as well as order and interpret tests independently.[50] They work in a variety of clinical settings, such as community clinics including NP-led, physicians' offices, home care, long term and retirement homes and hospitals.[51] Their scopes of practice vary from province to province and globally; they are difficult to compare but those in Canada appear similar to those in other developed countries.[52]

47 https://www.cdhowe.org/intelligence-memos/drummond-sinclair-calling-shots-health-workforce-planning

48 Referred to as Ontario Health Teams.

49 Stange, Kevin "How Does Provider Supply and Regulation Influence Health Care Markets? Evidence from Nurse Practitioners and Physician Assistants," *Journal of Health Economics*, 33 (2014): 1-27.

50 https://www.cihi.ca/en/nurse-practitioner-scopes-of-practice-vary-across-canadas-provinces-and-territories

51 https://www.cna-aiic.ca/en/nursing/advanced-nursing-practice/nurse-practitioners

52 Dowling, M., Beauchesne, M., Farrelly, F., & Murphy, K. 2013. "Advanced practice nursing: A concept analysis." *International Journal of Nursing Practice* 19(2): 131–140. https://doi.org/10.1111/ijn.12050

NPs are currently demonstrating how quickly and effectively they can help to fill the country-wide gap in primary care availability. Nova Scotia Health has partnered in a pilot project with pharmacies in two communities to improve access to primary care, adding an on-site nurse practitioner able to assess and treat a variety of health conditions.[53] Ontario has over 25 NP-led clinics that provide increased access to care in areas with many residents without a primary care provider.[54] British Columbia and New Brunswick have also started to utilize clinics in which NPs are the lead primary care provider. All NPs can address most of the conditions for which patients seek care; all consult with a physician or other healthcare providers when the care needs of a patient exceed their scope of practice. The resultant increased availability of same-day primary care appointments not only meets patients' needs in a timely way, it also diverts them from crowded emergency rooms and walk-in clinics in which follow-up care is lacking.

The overlap of services provided by nurse practitioners and family doctors can create tension between the professions. As a result, NPs are not yet being used to their full potential[55] even though the potential of scope of practice changes to enhance the productivity of the "system" has been clearly established. That potential should also be applied to other health professionals, registered and other nurses, therapists, pharmacists, paramedics, enabling all health workers to work to the full extent of their competence.

Role substitution among many health-sector workers may also be the answer to providing care and support, both general and specialized, to the elderly, a current and worsening problem given the shortage of physicians specializing in geriatric medicine. Were the licensed scopes of practice of the whole cascade of health-service workers to be re-evaluated and changed in accordance with modern and yet-to-be-developed educational and clinical training standards, much more could be accomplished. It has the added potential to reinforce teamwork and enhance the respect and job satisfaction of all health workers and thus retention in their current occupations while increasing the effectiveness of Canada's health system in meeting the population's needs.

Tapping into the benefits of expanded scopes of practice will be compromised by the shortages in many of the health professions, although even in this environment there would be net gains to the degree, for example, that labour supply can be more quickly enhanced for occupations by shorter education and training periods.

Recommendations for Health Human Resource Planning

Relevant points for recommendations flowing from the analysis of supply-demand imbalances include:

- There was an excess of demand over supply in the health workforce long before COVID-19 struck;
- The supply of health workers in nearly all categories continued to grow, some strongly, throughout the pandemic;
- Nevertheless, the stresses associated with COVID-19 have taken parts of the health sector beyond their limited capacity, accentuating the tightness and uneven distribution of the health workforce and impairing areas such as primary, mental health, and long-term care;

53 Nova Scotia Health. https://www.nshealth.ca/news/nova-scotia-health-partners-sobeys-and-lawtons-drugs-pharmacy-walk-clinic

54 Government of Ontario. (2015). "Nurse Practitioner-Led Clinics." https://www.health.gov.on.ca/en/common/system/services/npc/

55 Delvin, Braithwaite, S., and Camargo Plazas, P. 2018. "Canadian nurse practitioner's quest for identity: A philosophical perspective." *International Journal of Nursing Sciences* 5(2): 110–114. https://doi.org/10.1016/j.ijnss.2018.03.001

- Worsening conditions for many workers has worn down the resilience of nurses and personal support workers particularly, who have opted recently to take less stressful and/ or better compensated employment available elsewhere in healthcare or outside it;
- The very real problems reported in the media, closed hospital ERs and understaffed long-term care facilities, are not due solely to a shortage of health workers but primarily to conditions that motivate their leaving for greener pastures – a failure of retention and longstanding impediments to the provision of care by the most appropriate caregiver at the best site.
- Many of the past and present health-sector human resource problems will likely worsen without appropriate planning, primarily but not exclusively due to population ageing and insufficient growth in the supply of workers most related to the needs of the older population. Specific problem areas cited include, but are far from restricted to, the probability of greater difficulty recruiting primary care givers, a likely greater gap in demand and supply for nurses when recent returnees re-retire, and the large and likely growing shortage of PSWs.

We divide our recommendations into first, overriding considerations for governance and second, more specific actions required.

The Way Out of the Health Sector's Troubles

Overriding Governance Considerations

What we refer to complacently as Canada's healthcare system has many problems. Although most are well known and of long-standing, their recent claim for greater public attention is a consequence of the SARS-Covid-19 pandemic. Most notable have been high death rates among elderly people in nursing and retirement homes and more recently the failure of many hospital emergency rooms and intensive and general care facilities to meet the increased needs of seriously ill people of all ages. Relative to comparable countries, Canada's cost for healthcare is among the highest despite having fewer workers per capita in most occupations; however, the results achieved are mediocre at best, the worst of them being measured in terms of people's very long wait-times for access to care. If there is a silver lining, it may be that this current pandemic will prove to have been the trigger for action, for finally making fundamental changes happen; well-studied changes the necessity of which has been known for years but have repeatedly been put off by governments and the many other institutional and professional 'players' involved.

The most basic of those problems is that the so-called healthcare system is not that – a *real* system in which its several components work together seamlessly to optimize the good health of every member of Canada's population. Collectively those 'parts' lack leadership, governance in common, one that is expert and a-political but so structured as to respect Canada's Constitutional division of responsibility for health's optimization between the provinces, territories and the national government. Creating such a better governance model is not beyond our wit. We just need to get on with it.

Second in priority is the subject of this report, effective planning to address security of the supply of workers in all their diversity, needed now and in the foreseeable future to optimize Canadians' health and wellbeing, providing both for their support as well as their care. While currently focused on shortages of available workers to provide desperately needed home and institutional support for ALC patients who are taking hospital beds desperately needed by other patients, many of them acutely ill with Covid-19, this problem is of long-standing. It affects every province and territory and also requires nation-wide leadership to study the issues, consult meaningfully with the many public and professional 'players' involved, and develop an agreed-upon, continuing path forward. The goal: to ensure that the supply of health human resources into the future is in balance with the demand for services, including those attributable to future pandemics like that stressing the "system" now.

Equally vital is getting to work on the long-neglected need to address the welter of separate, unstandardized health information systems that plague the collection of the reliable, complete, and timely data essential to measure, analyze, and develop workable solutions to any problem, including that of health human resource planning. Above, we have emphasized repeatedly the need for readers to exercise the same caution we have applied in relying on the shaky veracity of the current data on which we have had to base our conclusions.

Even more threatening to the health of Canadians generally is the bald fact that multiple, unstandardized health information systems that do not "talk" to one another precludes sharing the basic clinical information among the many providers of care and support services that they all need to work together well. Incredibly, it is also not therefore available to the patients who, in law, own it. It strains both common sense and the imagination how the continuing national, provincial/territorial governments and health-provider organizational and professional players themselves have failed to tackle and rectify this fundamental problem long ago. It is hard to conceive how any system, or any component thereof, could hope to achieve anything resembling efficiencies or optimum productivity without a reliable information system in common.

Finally, there is the imperative to bolster the confidence of the Canadian public in its leaders, the governments and professionals in health and healthcare. Their public acknowledgement that the *status quo* must change, and quickly, both to preserve our cherished health "system" and make it more effective, coupled with their collective commitment to make change would do a lot toward re-building that confidence.

To any of these four governance issues there are no quick, simple, or uncontroversial strategic policy solutions that both providers and the public consumers of health services would accept more readily had the country the money with which to 'buy' change. Given the country's need to deal with climate change, population ageing, anaemic inventiveness, productivity, and the like, together with Canada's already high rates of taxation, expanding our existing debt to make changes in healthcare easier will not cut it. Certainly, it would not be acceptable without first demonstrating conclusively that maximum productivity has been wrung out of how we are doing things now.

Actions Required Within a Better Governance Structure

So, what else is to be done beyond the four over-arching priorities described above? There is no shortage of things to do. Following in priority order are some recommendations primarily related to getting on with health human resource planning.

1. Get better, more timely and complete data and analysis to support collective planning and development. The requisite expertise and data systems exist in different provinces throughout the country. But they need to be partnered with those of Statistics Canada, the Canadian Institute for Health Information (CIHI), and Canada Health Infoway to create a strong, credible base to achieve this and related objectives in relatively short order.
2. Accelerate the rate of development and expansion of Integrated Care Systems/Accountable Care Organizations (ICS/ACO)[56] and particularly of their Primary Care Teams/Homes with the goal to ensure that every Canadian is registered/rostered. Individuals would have ready access 24/7 to a family physician, nurse practitioner, or other provider of comprehensive primary care services including mental health and community-based home support and care services. The primary care provider members of such teams should be the "gate-keepers" to all other components of Canada's health system.

56 Also referred to as Accountable Care Organizations (ACO) or Ontario Health Teams (OHT) in Ontario.

3 Address the educational, training, and accreditation/certification issues that affect the application, entry and the success of students and trainees in currently less popular generalist occupational programs like family medicine or personal support workers, the graduates of which typically provide a broad range of services to people seeking help with diverse health problems and/or needs for a wide variety of care and support services. The objective is to enhance the status, professional standing, and rates of compensation of such providers of general services[57] and improve working conditions, leading to increased supply and better retention in their occupations.

4 Working, as in 3 above, with educational and training organizations and with accreditation, licensing, and certifying bodies, review the curricula and experiential content of programs leading to the qualification of all health professionals/workers with a view to developing accelerated programs leading to special competency in particular areas of knowledge or skill. This should include the continuation, if not acceleration, of recent momentum to address the challenges associated with the licensing and employment of internationally educated health workers. Consideration also must be directed to the aggregate supply over the long term of workers such as nurses and PSWs whose retention in hospitals and long-term care is currently particularly short.

5 Re-evaluate the scopes of practice of all regulated and other health professionals/providers with a view to minimizing duplication of skills, optimizing productivity and efficiency, and fostering teamwork, substitution, and interdependency among them. The goals should be to increase the number of people rostered with family health "homes" and expand the range of services provided, reduce the stress and enhance the job satisfaction of every component of all ICS/ACOs, but particularly primary health team members and of those they serve. Another is to reduce the primary care load currently on hospital emergency rooms.

6 With the involvement of provincial, territorial and municipal governments, engaged charities and other organizations, integrate the management and funding of existing home and community care and support services into the mandate of Primary Care Teams or "Homes." The objective is to provide "one-stop shopping" for people in need of assistance of all kinds to maintain their good health or regain it and to enable elderly people to remain longer, happy and safe in their own homes and communities.

Conclusion

For more than 60 years now we have proudly considered our healthcare "system" as one of our country's anchors, the things that define us as Canadians. But that vaunted system has for too long been taken for granted. The adaptations all systems must make to changing times, identified and well-studied in healthcare, have been too long put off and now we are in trouble. The additional stresses of a world-wide pandemic, of which SARS gave warning, have now come home to roost with Covid-19, piled on top of already long wait-times, "corridor medicine" in hospitals, and deficiencies in home, community, and long-term care generally. The result is an impending if not yet an actual crisis. As we said at the outset of this report, it would not take much to trigger one, even a collapse.

Preventing that will not be easy, but it can be done. We set out above steps we believe should be taken now particularly to address the labour shortages that are forcing the closure of hospital emergency rooms, that have caused the loneliness, sickness and deaths of our seniors in long-term care, and the difficulties too many Canadians have in joining a family health home. We have pointed

57 And some specialty services like geriatrics, rheumatology, and others particularly relevant to care of the burgeoning population of Canada's elderly.

to other major studies that have identified do-able ways of turning things around, creating a better, more resilient, sustainable, and affordable health system – a real one!

Step one is for our leaders, both in government and within the health sector, to get together, stop dithering, screw up their courage, and take action now to make change happen before the people's confidence in them and in the promise of change is lost. We Canadians need and deserve no less.

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