

The Private Cost of Public Queues for Medically Necessary Care, 2024

by Mackenzie Moir and Bacchus Barua

Summary

- One measure of the privately borne cost of wait times is the value of time that is lost while waiting for treatment.
- Valuing only hours lost during the average work week, the estimated cost of waiting for care in Canada for patients who were in the queue in 2023 was almost \$3.5 billion. This works out to an average of about \$2,871 for each of the estimated 1,209,194 Canadians waiting for treatment in 2023.
- This is a conservative estimate that places no intrinsic value on the time individuals spend waiting in a reduced capacity outside of the work week. Valuing all hours of the week, including evenings and weekends but excluding eight hours of sleep per night, would increase the estimated cost of waiting to \$10.6 billion, or about \$8,730 per person.
- This estimate only counts costs that are borne by the individual waiting for treatment. The costs of care provided by family members (the time spent caring for the individual waiting for treatment) and their lost productivity due to difficulty or mental anguish are not valued in this estimate. Moreover, non-monetary medical costs, such as increased risk of mortality or adverse events that result directly from long delays for treatment, are not included in this estimate.

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Introduction

In December 2023, the Fraser Institute released the results of its most recent annual measurement of waiting times for medically necessary treatments in Canada (Moir and Barua, 2023b). The study reported that the national median waiting time from specialist appointment to treatment was 13.1 weeks in 2023, which is 1.7 weeks shorter than in 2022. The total wait between referral from a general practitioner and receipt of treatment was 27.7

weeks in 2023—longer than the 27.4 weeks reported in 2022. Due to the continued potential impact of COVID-19 on wait times and the number of procedures performed in hospitals (CIHI, 2021), Moir and Barua (2023b) caution readers about interpreting the results presented in their study. As the estimates included in this report are based on their study, the same limitations and notes of caution apply here when interpreting the data.

Table 1: Estimated Number of Procedures for which Patients are Waiting after Appointment with Specialist, by Specialty, 2023

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Plastic Surgery	8,289	2,124	784	1,080	8,524	2,381	1,073	294	18	130	24,698
Gynaecology	5,665	6,598	1,230	1,839	9,158	5,652	1,141	2,227	183	402	34,096
Ophthalmology	22,814	21,541	3,537	2,004	33,216	29,959	9,649	5,395	2,241	29	130,386
Otolaryngology	3,055	4,391	3,375	648	8,409	8,411	428	321	52	–	29,091
General Surgery	22,881	14,494	3,543	5,609	38,248	35,171	1,775	11,263	1,141	1,563	135,689
Neurosurgery	1,187	1,161	296	162	6,174	1,004	1,274	125	–	–	11,383
Orthopaedic Surgery	29,493	23,483	11,922	4,367	31,377	33,881	6,319	3,658	1,542	2,500	148,542
Cardiovascular Surgery	480	300	49	11	846	629	40	6	4	36	2,402
Urology	7,633	4,622	3,532	2,093	14,031	3,442	1,832	15,598	–	–	52,784
Internal Medicine	27,719	10,473	3,800	5,216	17,575	3,804	927	8,975	–	156	78,645
Radiation Oncology	59	–	5	5	504	106	26	30	3	–	737
Medical Oncology	851	336	–	11	2,429	342	24	109	–	–	4,103
Residual	86,442	79,407	27,297	22,226	164,172	102,198	19,731	40,860	4,709	9,599	556,640
Total	216,567	168,930	59,371	45,273	334,662	226,980	44,240	88,863	9,894	14,415	1,209,194
Proportion of Population	3.9%	3.6%	4.9%	3.1%	2.1%	2.6%	5.3%	8.4%	5.7%	2.7%	3.0%

Notes:

a) Totals may not match sums of numbers for individual procedures due to rounding.

b) All data regarding oncology refer only to procedures done in hospitals. Most cancer patients are treated in cancer agencies. Therefore, the oncology data must be regarded as incomplete.

Source: Moir and Barua, 2023b.

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The measurement of waiting times, or the examination of the absolute delay Canadians must endure in order to receive medically necessary care, is only one way of looking at the burden of waiting for health care. We can also calculate the privately borne cost of waiting: the value of the time that is lost while waiting for treatment.¹

The privately borne cost of waiting for care

One way of estimating the privately borne cost of waiting for care in Canada was originally developed by Steven Globerman and Lorna Hoye (1990).² They calculated the cost of waiting by estimating the amount of time that could not be used productively by a patient while waiting for treatment.

Globerman and Hoye’s methodology is relatively straightforward. First, multiply the number of patients waiting for treatment by the wait times for those treatments in order to derive an estimate of the total number of weeks all patients will spend waiting for care. Then multiply this value by a measure of the proportion of time spent waiting for treatment that is rendered unproductive owing to the physical and emotional impact of an untreated medical condition. The monetary value of this lost productive time can then be projected.

In 2023, an estimated 1,209,194 Canadians were waiting for care after an appointment with a specialist (table 1). These Canadians were expected to wait, on average, for 13.1 weeks in order to receive

Table 2: Median Patient Wait for Treatment after Appointment with Specialist, by Specialty, 2023 (in Weeks)

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Plastic Surgery	45.7	15.0	46.9	44.4	21.8	10.3	47.4	22.4	26.4	13.1	23.9
Gynaecology	18.2	19.9	13.1	20.1	11.3	15.0	20.5	33.6	16.3	4.1	15.2
Ophthalmology	12.4	16.4	9.8	9.1	11.9	12.5	45.3	14.6	47.8	12.0	13.6
Otolaryngology	15.4	27.1	44.1	13.3	16.3	17.9	12.2	8.2	7.4	–	18.7
General Surgery	8.2	11.2	6.7	9.9	7.2	25.2	10.9	21.0	13.1	6.0	10.5
Neurosurgery	7.8	11.3	10.8	7.5	15.9	5.1	66.1	26.3	–	–	12.5
Orthopaedic Surgery	38.0	40.1	60.1	24.4	16.0	31.8	49.9	25.2	57.1	32.7	28.9
Cardiovascular Surgery (Urgent)*	2.0	2.2	1.2	0.5	1.6	1.5	1.0	3.0	1.5	3.9	1.7
Cardiovascular Surgery (Elective)	7.0	6.5	3.1	4.0	5.4	7.0	16.0	26.0	2.0	13.5	6.5
Urology	6.8	13.9	13.3	16.9	3.9	5.2	14.2	59.5	–	–	8.1
Internal Medicine	17.1	16.4	13.7	17.8	8.0	7.8	11.7	40.6	–	1.0	13.2
Radiation Oncology	5.6	–	3.5	3.9	2.3	2.3	2.2	5.1	2.3	–	2.5
Medical Oncology	5.9	3.5	–	0.5	2.0	2.1	1.2	4.3	–	–	2.4
Weighted Median	13.7	17.2	16.7	14.1	8.5	15.3	26.3	28.4	27.8	8.0	13.1

Note: To calculate the total weeks of waiting for care, only Cardiovascular Surgery (Urgent) was used.

Source: Moir and Barua, 2023b.

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medically necessary treatment. Of course, the wait times patients faced varied significantly across provinces and medical specialties (table 2). Multiplying the number of Canadians waiting in each of the 12 medical specialties in each of the 10 provinces by the weighted median wait time for that medical specialty in that province gives a rough estimate³ of the total amount of time that Canadians waited for treatment in 2023: about 21.9 million weeks. This estimate is lower than the 24.1 million weeks estimated for 2022 (Moir and Barua, 2023a).

Globerman and Hoye’s original estimate for the cost of waiting, which came from responses to a survey of physicians, used specialty-specific measures of the proportion of patients who were “experiencing significant difficulty in carrying on their work or daily duties as a result of their medical conditions” (1990: 26). The proportions they estimated ranged from 14% of patients in gynaecology to 88% in cardiovascular surgery, and averaged 41% overall (Globerman with Hoye, 1990; Esmail, 2009). The estimates of lost productivity measured by Globerman and Hoye cannot necessarily be applied today because of advances in medicine and the

medical system’s ability to deal with pain and discomfort with pharmaceuticals. These advances may allow many Canadians who are suffering significant difficulties to function at a higher level today than they would have in 1990, or even to maintain their normal activity levels. For this reason, our estimation of the cost of waiting in 2023 is based on more recent data from Statistics Canada’s Canadian Community Health Survey [CCHS]. Specifically, the survey’s Health Services Access Subsample [HSAS] provides estimates for the number of patients whose lives were affected by the wait for non-emergency surgery. Using data from the most recent HSAS, Ren and Barua (2017) estimated that 13.2% of people were adversely affected by their wait for non-emergency surgery in 2013 (Statistics Canada, 2014). This percentage is below even the lowest specialty-specific measure estimated by Globerman and Hoye (1990).⁴

An assumption that 13.2% of people waiting for treatment in 2023 experienced significant difficulties in their daily lives as a result of their untreated medical condition, and thus lost productivity while waiting for treatment, results in an estimate that

Table 3: Average of Average Hourly and Weekly Wages, by Province, January to December 2023

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Nominal average hourly wage	\$34.67	\$34.92	\$31.63	\$29.52	\$34.63	\$32.39	\$28.74	\$28.85	\$28.00	\$30.95	\$33.55
Nominal average weekly wage	\$1,265.12	\$1,322.21	\$1,181.46	\$1,087.35	\$1,278.08	\$1,151.53	\$1,077.63	\$1,068.62	\$1,044.15	\$1,218.16	\$1,232.07

Notes:

a) Wages reported are earned wages or salaries including tips, commissions, and bonuses before taxes and other deductions for all occupations, both sexes, ages 15 and over.

b) The nominal average hourly/weekly wage is an average of the hourly/weekly wage of January to December.

c) Previous reports used wage information from Statistics Canada’s table 14-10-0306-01. This new table (Table 14-10-0426-01) replaces archived table 14-10-0306-01.

Source: Statistics Canada, 2024a; calculations by authors.

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Table 4: Estimated Cost of Waiting for Medically Necessary Health Services from Specialist Appointment to Treatment, by Province and Specialty, 2023 (\$ thousands)

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Plastic Surgery	\$63,262	\$5,555	\$5,742	\$6,893	\$31,382	\$3,728	\$7,242	\$929	\$65	\$274	\$125,073
Gynaecology	\$17,268	\$22,875	\$2,513	\$5,302	\$17,483	\$12,882	\$3,325	\$10,571	\$412	\$267	\$92,898
Ophthalmology	\$47,116	\$61,833	\$5,405	\$2,611	\$66,625	\$56,969	\$62,269	\$11,100	\$14,769	\$56	\$328,753
Otolaryngology	\$7,863	\$20,781	\$23,243	\$1,237	\$23,139	\$22,892	\$746	\$372	\$53	–	\$100,326
General Surgery	\$31,223	\$28,464	\$3,698	\$7,968	\$46,532	\$134,606	\$2,749	\$33,438	\$2,066	\$1,511	\$292,255
Neruosurgery	\$1,547	\$2,294	\$499	\$176	\$16,561	\$775	\$11,993	\$464	–	–	\$34,308
Orthopaedic Surgery	\$187,185	\$164,535	\$111,852	\$15,284	\$84,864	\$164,038	\$44,850	\$12,994	\$12,134	\$13,156	\$810,891
Cardiovascular Surgery	\$161	\$116	\$9	\$1	\$231	\$144	\$6	\$3	\$1	\$23	\$694
Urology	\$8,626	\$11,256	\$7,343	\$5,077	\$9,209	\$2,739	\$3,696	\$131,065	–	–	\$179,011
Internal Medicine	\$79,204	\$29,999	\$8,132	\$13,363	\$23,847	\$4,504	\$1,549	\$51,386	–	\$25	\$212,008
Radiation Oncology	\$55	–	\$3	\$3	\$196	\$37	\$8	\$21	\$1	–	\$324
Medical Oncology	\$843	\$205	–	\$1	\$807	\$108	\$4	\$67	–	–	\$2,035
Residual (Using Est. Mean Data)	\$197,301	\$238,348	\$71,028	\$45,155	\$234,784	\$238,367	\$73,909	\$163,741	\$18,039	\$12,297	\$1,292,969
Total Cost	\$641,654	\$586,261	\$239,467	\$103,068	\$555,661	\$641,788	\$212,346	\$416,151	\$47,541	\$27,609	\$3,471,546

* The “residual” count is a count of the number of non-emergency procedures for which people are waiting in Canada that are not included in the Fraser Institute’s survey. The wait time used for calculating the residual cost is each province’s weighted median wait time for all specialties included in *Waiting Your Turn*.

Sources: Table 1; Table 2; Statistics Canada, 2014; calculations by authors.

roughly 2.9 million weeks were “lost” while patients waited for treatment. However, because this estimate is based on the assumption that all individuals face the same wait time for treatment in each specialty/province combination, it is mathematically equivalent to assuming that 13.2% of the productivity of all Canadians waiting for care was lost to a combination of mental anguish and the pain and suffering that can accompany any wait for treatment. Multiplying this lost time by an estimate of

the average weekly wage of Canadians in 2023 (given in table 3), which provides an estimate for the value of the lost time to each individual,⁵ gives an estimate of the cost of productive time that was lost while individuals waited for medically necessary treatments in 2023 (table 4).

The estimated cost of waiting for care in Canada for patients who were in the queue in 2023, according to calculations based on the methodology produced

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Table 5: Estimated per Capita Cost of Waiting for Medically Necessary Health Services, by Province, 2023

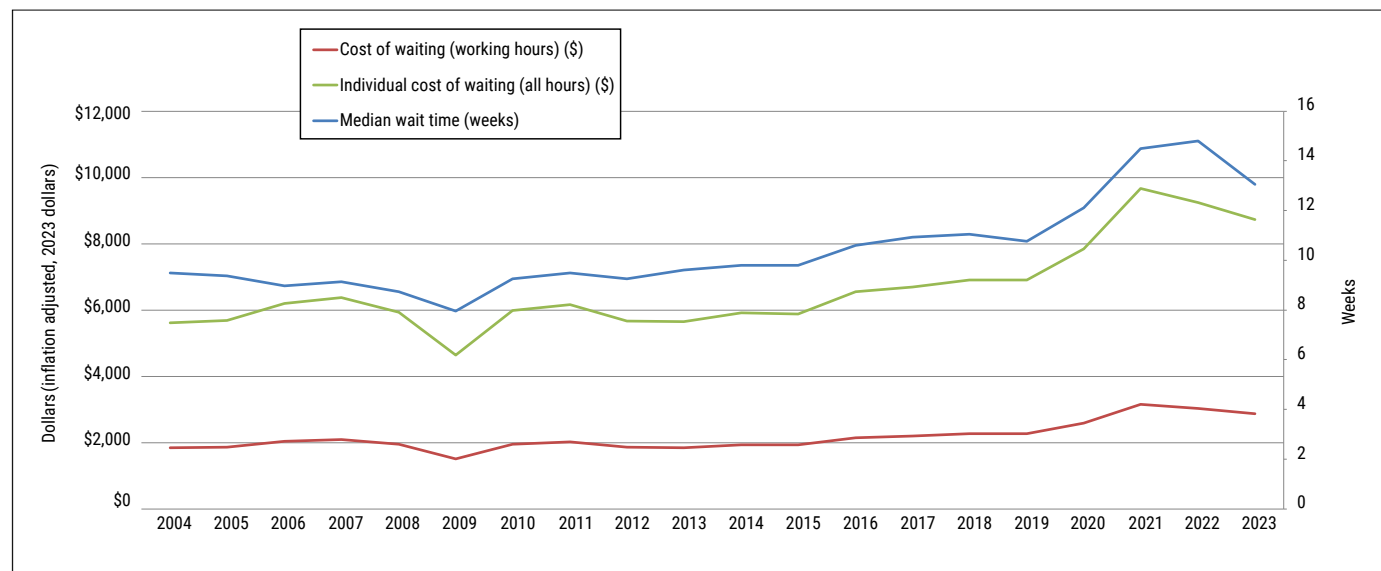
BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
\$2,963	\$3,470	\$4,033	\$2,277	\$1,660	\$2,828	\$4,800	\$4,683	\$4,805	\$1,915	\$2,871
6	5	4	8	10	7	2	3	1	9	

by Globerman and Hoyer (1990), was almost \$3.5 billion—slightly lower than the almost \$3.6 billion estimated in 2022 (see Limitations). This year’s total \$3.5 billion cost works out to an average of about \$2,871 for each of the estimated 1,209,194 Canadians waiting for treatment in 2023. The highest costs per patient waiting for care were found in Prince Edward Island (\$4,805), with the lowest found in Ontario at \$1,660 (see table 5). Alternately, the total \$3.5 billion cost works out to roughly \$21,750 for each individual among the 13.2% of

patients in the queue who were suffering considerable hardship while waiting for care.⁶

Of course, this number is a conservative estimate of the private cost of waiting for care in Canada. It assumes that only those hours during the average work week should be counted as lost. It places no intrinsic value on the time individuals spend waiting in a reduced capacity outside of the working week. Valuing all hours of the week, including evenings and weekends but excluding eight hours of

Figure 1: Calculated Cost of Waiting per Patient and Median Wait for Treatment after Consultation with Specialist, 2004–2023



Sources: Statistics Canada, 2004-2014; Statistics Canada, 2024b; Various authors, 2005-2023; calculations by authors.

sleep per night, at the average hourly wage (given in table 3) would increase the estimated cost of waiting to almost \$10.6 billion or about \$8,730 per person.

This estimate only counts costs that are borne by the individual waiting for treatment. The costs of care provided by family members (in time spent caring for the individual waiting for treatment) and their lost productivity due to difficulty or mental anguish, are not valued in this estimate.⁷ Non-monetary medical costs, such as increased risk of mortality or adverse events that result from long delays for treatment are also not included in this estimate (Day, 2013). Moreover, we only estimate the cost of the wait time from specialist to treatment, and do not include the cost of the 14.6 week wait time from referral by a general practitioner to seeing a specialist,⁸ or other delays in the care pathway.

From a historical perspective, the estimated \$2,871 private cost of waiting for treatment per patient in 2023 is 56% higher than the \$1,840 (inflation adjusted, 2023 dollars) estimated for 2004 (see figure 1). The nominal cost per patient waiting in 2023 is 1.8% lower than in 2022 (\$2,925), it has decreased by 5.5% on an inflation-adjusted basis. If hours outside of the work week are included, the estimated \$8,730 private cost of waiting per patient in 2022 is 56% higher than the \$5,613 estimated for 2004. Again, while the nominal cost per patient waiting (including hours outside of work) in 2023 is 1.9% less than in 2022 (\$8,897), it is 5.6% lower on an inflation adjusted basis.⁹

Limitations and comparability

The estimates presented in this report should be interpreted with caution due to the potential impact of COVID-19 on response rates, wait times, and

the number of procedures performed in hospitals (CIHI, 2021). While Moir and Barua (2023b) detail a number of relevant factors in the Method section of *Waiting Your Turn 2023* (upon which this study is based), particular attention should be given to the effect of documented decreases in the number of procedures performed in Canada during the COVID-19 pandemic, when compared to years just before the pandemic (CIHI, 2021).

Moir and Barua's (2023b) estimate for the number of procedures for which patients are waiting is calculated by taking the total annual number of a specific procedure, dividing that figure by 52 (to get the number performed per week), then multiplying that figure by the median wait for that procedure (in weeks). The procedure counts used for this estimate are sourced from the National Ambulatory Care Reporting System (NACRS) and the Discharge Abstract Database (DAD). Notably, the 2023 report used the latest procedure counts available from the 2021/2022 fiscal year, a year in which fewer procedures were performed due to the varied policy responses to the emerging COVID-19 pandemic. By design, all else constant, this will result in lower estimates of the total number of patients waiting for care.

Further, editions of this report from 2005-2016 used a Statistics Canada finding that 11.0% of people were adversely affected by their wait for non-emergency surgery in 2005 (Statistics Canada, 2006). Ren and Barua (2017) calculated a newer estimate of this figure (13.2%) based on raw data (weighted population estimates) contained in the 2014 Data Dictionary of the Canada Community Health Survey's (CCHS) Health Services Access Subsample (Statistics Canada, 2014).¹⁰ This year's report also uses this more recent estimate. The two estimates are, however, not directly comparable because the 11.0% used in the past reports was

calculated using data that “do not reflect the waiting times of those still waiting at the time of the survey” (Statistics Canada, 2006). By including those still waiting at the time of the survey, the updated estimate for 2005 would be 14.4%. This suggests that previous reports may have underestimated the cost of waiting for treatment.

This year’s report therefore also contains Ren and Barua’s (2017) revised estimates of the cost of waiting since 2004 based on updated estimates of the percent of patients whose life are affected by the wait for non-emergency surgery calculated using data from successive iterations of the Canada Community Health Survey’s [CCHS] Health Services Access Subsample Data Dictionaries¹¹ (2003 to 2013).

Conclusion

The rationing of health care in Canada through queues for medically necessary health services imposes direct costs on those waiting for care. The ability of individuals who are waiting to enjoy leisure time and earn an income to support their families is diminished by physical and psychological pain and suffering. In addition, friends and family may be asked to help those waiting for treatment, or may suffer similar reductions in their productive lives because of their own psychological pain.

In 2023, the estimated 1,209,194 Canadians who were waiting for treatment endured an estimated private cost of almost \$3.5 billion, and possibly substantially more, in lost productivity and leisure time.

Notes

- 1 The calculation here measures only the cost of the wait time from specialist to treatment, and does not include the 14.6 week wait time from referral by a general practitioner to seeing a specialist (Moir and Barua, 2023b), or other delays in the care pathway. Thus, this estimate of the privately borne cost of waiting is an underestimate of the true privately borne cost of waiting.
- 2 Globerman and Hoye employed this methodology in 1990 to develop an estimate of the cost of waiting for medically necessary treatment in the first measurement of waiting times in Canada published by the Fraser Institute. Follow-up examinations published by the Fraser Institute of the privately borne cost of queuing since 2004 also employ this methodology.
- 3 This estimate includes the number of non-emergency procedures for which people are waiting that were not included in the survey, reported as the “residual” number of procedures for which people are waiting. For the purposes of calculation, it is assumed that the wait time for these procedures is the same as the weighted median for the 12 specialties in the province in question. For further details on how this number is calculated, see Moir and Barua, 2023b.
- 4 Statistics Canada’s findings are based on the percentage of survey respondents who reported that “waiting for non-emergency surgery affected their life.” Globerman and Hoye’s estimate measures the number of patients who “experienced significant difficulty carrying on their work or daily duties as a result of their medical conditions.” Notably, in 2013, 11% of those who reported being affected by their wait reported a loss of income, while 21% experienced loss of work. At the same time, 45% experienced worry, anxiety, and stress, 54% experienced pain, and 42% experienced problems with activities of daily living (Statistics Canada, 2014; calculations by Ren and Barua, 2017). The methodology employed here for the estimate of the private cost of waiting attempts to measure much more than just lost work or lost income. Rather, it estimates lost productivity in total, including lost on-the-job productivity, lost enjoyment of life, inability to play sports, etc. In other words, the private cost of waiting for care estimated here values the amount of time Canadians spend waiting for care during which these individuals are unable to participate fully in their lives.
- 5 Though extending this value of time to all individuals may seem questionable (given that some children and retired seniors will be included in the number of patients in the queue), one need only understand that the lost leisure or ability to concentrate that these individuals endure must have some value. Since seniors are enjoying increasing opportunities to engage in part-time employment, their labour/leisure trade off

will be such that the last unit of leisure a senior citizen enjoys is equal in value to the last unit of work he or she undertakes. Seniors who choose not to work are clearly placing a higher value on their leisure time than the labour market will offer for their labour. For children, the value of their leisure (which can potentially be viewed as time for personal growth) or productivity at school (which can be viewed as an investment for the future) is assumed to be, for simplicity, not significantly different from that of a working adult. Furthermore, as there are likely to be few children waiting for treatment, any variation from the value of time for adults is not likely to have a marked effect on the average calculation.

- 6 Gliberman and Hoye estimated the cost of queuing for medically necessary care to be about \$2,900 per patient in 1989. In 2023 dollars, this works out to approximately \$6,091.
- 7 In 2013, 13% of individuals whose lives were affected by the wait times for treatment reported an increased dependence on family or friends based on the CCHS 2013 Subsample Data Dictionary (Statistics Canada, 2014; calculations by Ren and Barua, 2017).
- 8 In 2013, approximately 19.4% of individuals who visited a specialist indicated that waiting for the visit affected their life (Statistics Canada, 2014; calculations by Ren and Barua, 2017).
- 9 According to the Canadian CPI, inflation in Canada was 3.9% between 2022 and 2023. Between 2021 and 2022 inflation was at 6.8% and the average rate of inflation between 2004 and 2020 was 1.7%. As a result, readers should exercise some caution when interpreting these results, as their adjustment this year is well and above the annual norm during the years preceding this period.
- 10 Ren and Barua (2017) estimated the rate using (population weighted) responses to WTM_28 in the CCHS 2013 Subsample Data Dictionary (Statistics Canada, 2014). Due to the changes made by CCHS over time, the variable name may vary depending on the edition; however, the concept has stayed the same.
- 11 The subsample (which includes estimates for all 10 provinces) on access to health care services (ACC) and waiting times (WTM) has been conducted within the CCHS every odd year from 2001 to 2013. For even years, Ren and Barua (2017) calculated an average based on the preceding and following year. For example, in 2012, they took an average of the rate in 2011 (14.8%) and 2013 (13.2%) to get the 14.0%. In 2015, the HSAS subsample was discontinued. The authors therefore use the 13.2% from the 2013 edition for all subsequent calculations.

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