The private cost of public queues

The cost for those waiting for care in Canada was over $751 million in 2008

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This past October, the Fraser Institute released its eighteenth annual measurement of waiting times for medically necessary treatments in Canada (Esmail and Hazel with Walker, 2008). This most recent measurement shows that the national median waiting time from specialist appointment to treatment fell from 9.1 weeks in 2007 to 8.7 weeks in 2008.

But 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 time that is lost while waiting for treatment.[1] While the absolute delay Canadians endured from specialist to treatment (which is but one stage of the total wait Canadians endure) in 2008 was lower than that in 2007, it is entirely possible that the value Canadians place on time has changed over the past year in such a way that the impact of this component of wait times for treatment has not improved.[2]

The privately borne cost of waiting for care

One way of estimating the privately borne cost of care in Canada was originally developed by Steven Globerman and Lorna Hoye (1990).[3] 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 simple. First, the number of patients who are waiting for treatment is multiplied 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. This value is then multiplied by a measure of the proportion of time spent waiting for treatment that is rendered unproductive by the physical and emotional impact of an untreated medical condition. The monetary value of this lost productive time is then estimated.

In 2008, an estimated 750,794 Canadians were waiting for care after an appointment with a specialist.

In 2008, an estimated 750,794 Canadians were waiting for care after an appointment with a specialist (table 1). These Canadians waited, on average, 8.7 weeks for treatment though those wait times varied significantly when broken down by province and medical specialty (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 estimate of the total amount of time that Canadians waited for treatment in 2008: about 9.14 million weeks. This estimate is less than the estimate of 9.99 million weeks for 2007 (Esmail, 2007).

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 condition." The proportions they estimated ranged from 14% of patients in gynaecology to 88% in cardiovascular surgery, and averaged 41% overall (Globerman and Hoye, 1990; Esmail and Hazel with Walker, 2008). However, 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 through 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, this author's estimation of the cost of waiting in 2008 uses a Statistics Canada finding that 11.0% of people were adversely affected by their wait for non-emergency surgery in 2005 (Statistics Canada, 2006). This percentage is below even the lowest specialty-specific measure estimated by Globerman and Hoye (1990).[4]

Table 1: Estimated number of procedures for which patients are waiting after appointment with specialist, by specialty, 2008

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Plastic Surgery	3,164	1,773	869	1,466	5,132	5,813	1,216	1,375	41	252	21,101
Gynaecology	4,501	3,128	857	1,031	8,082	4,496	670	1,072	322	981	25,141
Ophthalmology	11,533	6,437	2,605	2,010	20,850	69,846	2,276	2,505	211	1,130	119,403
Otolaryngology	5,548	1,685	4,877	1,598	9,238	3,423	885	1,200	359	353	29,166
General Surgery	6,992	10,089	5,147	2,882	23,992	25,139	860	2,536	82	954	78,672
Neurosurgery	1,284	939	787	201	2,870	2,650	598	202	—	51	9,583
Orthopaedic Surgery	15,638	7,431	7,624	4,262	25,036	16,940	2,543	11,416	521	1,215	92,626
Cardiovascular Surgery	231	164	99	24	258	218	125	64	—	2	1,185
Urology	5,373	3,407	1,911	690	11,728	9,549	1,903	4,288	94	2,524	41,468
Internal Medicine	5,865	6,014	3,025	1,333	18,235	18,294	396	1,519	—	2,956	57,637
Radiation Oncology	60	60	14	1	166	192	51	—	2	—	546
Medical Oncology	56	154	—	40	551	211	37	34	5	96	1,184
Residual	36,160	28,729	17,392	10,341	78,617	67,267	7,376	17,688	1,095	8,417	273,081
Total	96,407	70,009	45,207	25,878	204,755	224,037	18,936	43,900	2,734	18,930	750,794

Note: Totals may not match sums of numbers for individual specialties/provinces due to rounding.

Source: Esmail and Hazel with Walker, 2008; calculations by authors.

Table 2: Median patient wait for treatment after appointment with specialist, by specialty, 2008 (in weeks)

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Plastic Surgery	19.9	19.4	22.4	32.8	11.4	26.1	33.9	46.3	13.6	16.0	19.4
Gynaecology	9.5	8.1	6.8	8.5	6.0	6.4	8.3	8.1	17.8	11.1	7.2
Ophthalmology	10.8	9.9	8.9	7.6	6.0	11.8	11.7	8.4	17.4	11.7	9.7
Otolaryngology	19.7	7.6	44.4	16.6	8.5	6.1	9.3	13.6	26.6	5.8	11.1
General Surgery	5.2	9.3	12.6	7.4	5.5	7.2	5.0	6.6	2.8	3.8	6.6
Neurosurgery	13.7	12.1	28.2	8.6	9.8	12.7	32.3	11.0	—	3.2	12.3
Orthopaedic Surgery	22.6	16.2	45.3	22.9	12.7	20.3	18.1	87.4	23.2	18.8	19.8
Cardiovascular Surgery (Urgent)	1.3	1.6	2.5	0.9	0.6	0.6	4.2	1.4	—	2.4	0.9
Cardiovascular Surgery (Elective)	7.0	7.8	8.3	2.6	2.4	4.7	11.5	5.7	—	2.9	4.7
Urology	6.4	5.2	9.5	3.4	3.5	4.4	10.1	13.7	4.3	17.7	5.1
Internal Medicine	7.1	10.4	10.5	5.5	6.7	9.4	7.5	7.1	—	17.5	8.2
Radiation Oncology	4.4	4.5	3.0	2.5	2.8	4.7	4.6	—	1.8	—	3.8
Medical Oncology	1.2	3.5	—	1.7	2.0	1.0	1.6	2.6	2.0	2.2	1.7
Weighted Median	9.9	9.4	16.1	9.5	6.3	9.3	11.1	15.4	13.2	11.1	8.7

Note: Totals may not match sums of numbers for individual specialties/provinces due to rounding.

Source: Esmail and Hazel with Walker, 2008.

An assumption that 11.0% of people waiting for treatment in 2008 experienced significant difficulties in their daily lives as a result of their medical condition, and thus lost productivity while waiting for treatment, results in an estimate that more than 1 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 11.0% of the productivity of all Canadians waiting for care was lost to a combination of mental anguish and the pain and suffering that accompany any wait for treatment. Multiplying this lost time by an estimate of the average weekly wage of Canadians in 2008[5] (given in table 3), which provides an estimate of the value of the lost time to each individual,[6] gives an estimate of the cost of the productive time that was lost due to individuals waiting for medically necessary treatment in 2008 (table 4).

Table 3: Average of average hourly and weekly wages,* by province, January to October 2008

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Nominal Average Hourly Wage	$21.37	$23.52	$20.18	$19.21	$22.08	$19.92	$17.69	$17.99	$16.83	$18.72	$21.22
Nominal Average Weekly Wage	$778.42	$898.31	$758.32	$703.74	$814.50	$708.04	$668.81	$669.94	$628.29	$731.56	$780.22

* The wages reported here are earned wages or salaries including tips, commissions, and bonuses before taxes and other deductions

Source: Statistics Canada's CANSIM database; calculations by authors.

Table 4: Calculated cost of waiting for medically necessary health services, by province and specialty from specialist appointment to treatment, 2008 ($ thousands)

	BC	AB	SK	MB	ON	QC	NB	NS	PE	NL	CAN
Plastic Surgery	5,387	3,391	1,626	3,718	5,258	11,830	3,036	4,695	39	323	39,302
Gynaecology	3,642	2,495	486	680	4,343	2,244	409	640	397	878	16,215
Ophthalmology	10,682	6,313	1,943	1,182	11,165	64,218	1,960	1,557	254	1,068	100,341
Otolaryngology	9,357	1,272	18,044	2,051	7,004	1,615	604	1,202	661	165	41,975
General Surgery	3,117	9,279	5,390	1,654	11,750	14,083	319	1,232	16	294	47,131
Neurosurgery	1,501	1,123	1,849	135	2,521	2,629	1,424	163	0	13	11,358
Orthopaedic Surgery	30,311	11,902	28,839	7,557	28,407	26,730	3,384	73,488	835	1,836	213,289
Cardiovascular Surgery	26	26	20	2	13	9	39	7	0	0	142
Urology	2,924	1,743	1,516	184	3,721	3,252	1,418	4,329	28	3,593	22,708
Internal Medicine	3,552	6,185	2,638	563	10,914	13,431	219	791	0	4,160	42,453
Radiation Oncology	23	26	3	0	42	70	17	0	0	0	182
Medical Oncology	6	53	0	5	99	17	4	7	1	17	209
Residual (Using est. mean data)*	30,700	26,744	23,369	7,591	44,052	48,588	6,038	20,137	996	7,508	215,722
Total Cost	101,227	70,553	85,723	25,321	129,289	188,714	18,872	108,246	3,226	19,856	751,028

Note: Totals may not match sums of numbers for individual specialties/provinces due to rounding.

*The "residual" 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 procedures and specialties included in *Waiting Your Turn*.

Sources: Esmail and Hazel with Walker, 2008; Statistics Canada's CANSIM database; calculations by authors.

The estimated cost of waiting for care in Canada for patients who were in the queue in 2008, according to calculations based on the methodology produced by Globerman and Hoye (1990), was slightly more than $751 million—an average of about $1,000 for each of the estimated 750,794 Canadians waiting for treatment in 2008. Alternatively, that cost works out to roughly $9,094 for each individual among the 11.0% of patients in the queue who were suffering considerable hardships while waiting for care.[7]

Of course, this number is a conservative estimate of the private cost of waiting for care in Canada. This estimate 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 sleep per night, at the average hourly wage (given in table 3) would increase the estimated cost of waiting to nearly $2.29 billion, or about $3,045 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 terms of 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.[8] 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 (Esmail and Hazel with Walker, 2008).

In 2007, the estimated private cost of queuing for treatment using the 11% estimate, adjusted for inflation,[9] was more than $816 million in total—about $986 per patient. If the cost of the hours lost outside of the work week were included, this estimate would increase to nearly $2.49 billion, or about $3,006 per individual after adjusting for inflation. From 2007 to 2008, therefore, the cost of waiting increased by roughly $14 per Canadian in the queue if only working hours are valued, or by roughly $39 if all non-sleeping hours are valued. In summary, while the wait time for treatment after seeing a specialist in 2008 has improved from its level in 2007, the privately borne cost of enduring that wait time, on an individual basis, has increased on average due to an increase in the value of time.

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 2008, the estimated 750,794 Canadians who were waiting for treatment endured an estimated private cost of at least $751 million, if not substantially more, in lost productivity and leisure time. That cost was, on a per patient basis, greater than the cost in 2007.

Notes

1 The measurement below measures only the cost of the wait time from specialist to treatment and does not capture the cost of the wait time from general practitioner to specialist. Thus, this estimate of the privately borne cost of waiting is an underestimate of the true privately borne cost of waiting.

2 A brief review of the literature on the privately borne cost of waiting for care in Canada and the United Kingdom is available in Esmail and Hazel with Walker (2008). The most recent estimate of the privately borne costs of waiting for care in Canada using the methodology employed in this article was published in 2007 (Esmail, 2007). The analysis in this article reproduces the calculations undertaken in Esmail (2007), using the most recent wait times and wage/salary estimates available.

3 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 of the privately borne cost of queuing in 2004, 2005, 2006, and 2007 also employed this methodology.

4 Statistics Canada's findings are from 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 condition." Notably, in a 2003 survey of Canadians, only 13% of those who reported being affected by their wait in the Statistics Canada study reported a loss of income, while 14% experienced loss of work. At the same time, 60% experienced worry, anxiety, and stress, 51% experienced pain, and 31% experienced problems with

Erratum

In the November issue of *Fraser Forum*, Fraser Institute Senior Policy Analyst Jean-Francois Minardi authored "Quebec's agriculture in jeopardy" and co-authored "Water rights under threat in Quebec," but his biography did not appear on our "About the Authors" page. We regret the error and include his biography below.

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activities of daily living (Sanmartin et al., 2004). In the most recent Statistics Canada survey, 49% of those who were affected by their wait for care experienced worry, anxiety, and stress, 51% experienced pain, and 36% experienced problems with activities of daily living (Statistics Canada, 2006).

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 percentage of time Canadians spend waiting for care during which these individuals are unable to participate fully in their lives. Also, this estimate does not necessarily assume that 11.0% of individuals are losing all of their productivity while 89.0% are completely unaffected. Rather, the estimates are constructed in such a way that the lost productivity can be 100% for 11.0% of patients, or 11.0% for 100% of patients, or any combination thereof.

5 At the time of publication, wage data for November and December 2008 were not available from Statistics Canada. An average of the average monthly wages (weekly and hourly) for the first 10 months of 2008 was used to estimate the average wage for the year.

6 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 suffered by these individuals must have some value. Since most seniors are enjoying increasing opportunities to seek at least part-time employment in the service sector, their labour/leisure trade-off will be such that the last unit of leisure enjoyed by a senior citizen is equal in value to the last unit of work that is undertaken. Seniors who do not choose 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 adult reservation wages is not likely to have a marked affect on the average calculation.

7 Globerman and Hoye estimated the cost of queuing for medically necessary care to be about $2,900 per patient in 1989. In 2008 dollars (using the average of the monthly Consumer Price Index for the first 10 months of 2008 to estimate the price index for the year), this works out to approximately $4,426.

8 A 2003 Statistics Canada survey found that 20.2% of individuals whose wait times affected their lives reported increased dependence on family or friends (Sanmartin et al., 2004).

9 Since data for the full year were not available at the time of publication, the average of the monthly Consumer Price Index for the first 10 months of 2008 was used to estimate the price index for the year. In addition, the estimate from Esmail (2007) was revised and is now based on average wage data for all 12 months of 2007 (the original figures were based on an average of average wage data for January to October 2007).

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ebrate and even less to be proud of. To the contrary, that careful examination should bring Canadians to the conclusion that governments of all stripes across Canada are continuing to fail them when it comes to providing timely access to the care they require. All of Canada's governments seem committed to the status quo, which has proven to be incapable of delivering timely access to care despite world-class levels of expenditure. Canadians deserve better.

Note

1 In 2000, provincial health spending per capita (in 1997 dollars) was $1,935.85. In 2008, provincial health spending per capita (in 1997 dollars) was estimated to be $2,532.10. In total, spending rose from $59.4 billion to $84.2 billion (all in 1997 dollars) (CIHI, 2008).

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