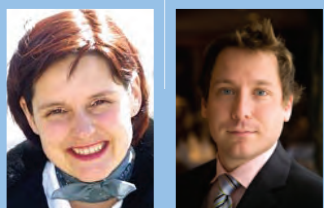


AN OVERVIEW OF OPERATING ROOM USE IN QUEBEC HOSPITALS

As questions about regarding management and resource use in the public health care system, it is important to evaluate the place the private sector could occupy. With this first Economic Note on the use of health care resources, the Montreal Economic Institute wishes to add some thoughts on the optimization of operating blocks in Quebec. A later Economic Note will look into the supply of human resources in the health care system.



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In a poll conducted in July 2007, 67% of Quebecers said they were at least somewhat favourable to the government allowing more space for the private sector in health care services.¹ An earlier poll showed that 60% of Quebecers would agree to the government allowing faster access to health care for those who wished to pay for this care in the private sector while maintaining the current system of free universal health care.² Though these polls appear to indicate that there exists a demand for privately financed health care, the matter of growth in the supply of services, linked to the issue of the use made of existing material resources, has been less deeply analyzed.

The problem of waiting lists for surgery

The persistent problem of waiting lists, especially for surgery, is leading to questions about the extent to which available material resources in Quebec's network of health care institutions are being put to use. More particularly, how and to what point are operating blocks in Quebec hospitals being used?

In a study covering seven Canadian provinces, the Canadian Institute for Health

Information discovered that the median waiting time for knee surgery varied from 13 weeks in Prince Edward Island to a year in Saskatchewan.³ Quebec is no exception to the rule in this area, with waiting times for surgery regularly making headlines.

The median waiting time for a visit to a medical specialist and treatment for orthopedic knee or hip surgery in Quebec has remained relatively stable from 2003 to 2007. While patients waited 24.5 weeks in 2003,⁴ they had to wait 24 weeks in 2007,⁵ according to estimates. This is up slightly from 2000-2001, when patients waiting for this type of treatment received operations 21 weeks after visiting a medical specialist.⁶

The situation differs between regions for the same treatment. In Montreal, for example, more than

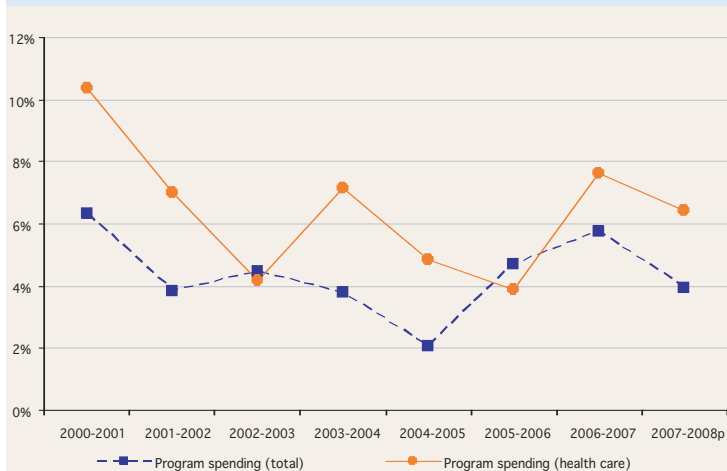
400 patients had been on waiting lists for knee surgery for more than six months in March 2007, accounting for more than 20% of surgeries of this type performed in 2005-2006. The comparable proportions were 19% in Abitibi-Témiscamingue, 17% in Montréal and the Eastern Townships, and 15% in the Lower St. Lawrence. At the other extreme, patients waiting for these operations represented 2% of surgeries performed



1. Léger Marketing and Le Journal de Québec, *Les Québécois et l'accès aux soins de santé*, July 2007, p. 4.
2. Léger Marketing (for the Montreal Economic Institute), *The Opinion of Canadians on Access to Health Care*, September 2006, p. 5.
3. Canadian Institute for Health Information, *Waiting for Health Care in Canada: What We Know and What We Don't Know*, 2006, p. 39. The study covered Prince Edward Island, Manitoba, Ontario, Alberta, Saskatchewan, British Columbia and Nova Scotia. Quebec data are not harmonized with the CIHI data.
4. Nadeem Esmail and Michael A. Walker, *Waiting your Turn: Hospital Waiting Lists in Canada*, 13th Edition, Fraser Institute, 2003, p. 46.
5. Nadeem Esmail and Michael A. Walker, *Waiting your Turn: Hospital Waiting Lists in Canada*, 17th Edition, Fraser Institute, 2007, p. 50.
6. Michael A. Walker and Greg Wilson, *Waiting your Turn: Hospital Waiting Lists in Canada*, 11th Edition, Fraser Institute, 2001, p. 41.

FIGURE 1

Growth in program spending



Source: Treasury board, *Expenditure Budgets*, 2001-2002 to 2007-2008, Volume III.

the previous year in Saguenay-Lac-Saint-Jean, 3% in Chaudière-Appalaches and 4% in the Laurentians.⁷

Some regions have more trouble than others in treating patients awaiting operations. For example, in March 2007, the number of patients waiting more than six months⁸ in the Outaouais region represented more than 10% of the surgeries performed the previous year for four of the five types of surgery in the study.⁹ The Montreal region experienced similar difficulties in two of the five types of surgery.¹⁰

The Canadian Institute for Health Information estimates that 40% of total waiting time for knee or hip surgery is due to the delay between referral to a specialist and the decision to operate, whereas 60% is due to the delay between the decision to operate and the moment the surgery actually takes place.¹¹

The use of operating rooms

An investigation was conducted by the Montreal Economic Institute to get information on the use of operating rooms during the latest available period (April 2005 to March 2006). A data collection form was sent to Quebec hospitals, covering the use of operating blocks during the day, evening and night shifts, on weekdays and weekends. The results of this investigation reveal that operating rooms are clearly underused.

Thirty-six hospitals were asked to reply to the form. Thirty-two replied voluntarily, giving a response rate of 89%. Nine forms were received after the deadline or were incomplete. The final sample comprised 23 hospitals, with a total of 264 operating rooms, both in outlying areas and in large urban centres.¹² This represents 49% of the operating rooms in public hospitals in 2005-2006.¹³

The hospitals in the sample had an average of 11.5 operating rooms. A room was considered open when it had a rate of use above zero. The opening rate was 92% during day shifts on weekdays. This means an average of nearly one closed room per hospital.

The rate of use of open operating rooms was 46% for day shifts on weekdays.¹⁴ This is a result far below the desirable rate of use of an operating room. The report of an investigation by France's *Mission nationale d'expertise et d'audit hospitaliers* stated "that a goal to be reached initially would be occupation of rooms between 75% and 80% of the available time (taking account of refurbishment of rooms outside the operating program and of

According to the investigation, the rate of use of open operating rooms was 46% for day shifts on weekdays.

7. Department of Health and Social Services, *Accès aux services médicaux spécialisés / Sommaire*, March 2007, <http://wpp01.msss.gouv.qc.ca/appl/g74web/SommairePDF.asp>. Data on the number of patients on waiting lists for surgical operations remain highly fragmentary, with the summary of access to specialized medical services published by the department giving details on waiting times only for some treatments.

8. The Department of Health considers patients to be on waiting lists starting from the time a hospital waiting list mechanism takes charge of them.

9. The types of surgery are: knee arthroplasty, hip arthroplasty, cataract operations, day surgeries and surgeries with hospitalization. Delays of six months or less represent the Quebec government's access target for cataract, knee and hip surgeries. This does not apply, however, to groups of surgeries.

10. Department of Health and Social Services, *op. cit.*, Note 6.

11. Canadian Institute for Health Information, *op. cit.*, Note 2, p. 19.

12. The 23 hospitals represent 11% of the total of 215 hospitals, but since the sample consists mostly of hospitals in large population centres with a high volume of surgeries, the proportion of operating rooms taken into account is much higher. To be more precise, the sample consists of 12 hospitals in the Montreal metropolitan area (nine of them on Montreal Island), five hospitals in the Quebec City area, two in the Gatineau area, one in the Sherbrooke area and three in other parts of Quebec.

13. According to data provided by the Department of Health and Social Services, there was a total of 543 operating rooms in 2005-2006.

14. The rate of use is defined as the percentage of hours used as a proportion of the potential number of opening hours. The potential number of opening hours is 160 hours per four-week budget period for day and evening shifts on weekdays (based on eight hours per shift, five days per week and four weeks per budget period). The potential number of opening hours is 64 hours per four-week fiscal period for day and evening shifts on weekends (based on eight hours per shift, two days per weekend and four weekends per budget period). Rates were calculated using four-week budget periods, corresponding to the operating periods of the Department of Health. Two shifts were examined for surgery: the day shift (generally from 8 a.m. to 4 p.m.) and the evening shift (generally from 4 p.m. to midnight). Although shifts always cover eight-hour blocks, the times they begin and end may vary by hospital.

TABLE 1

Results of the investigation on the use of operating rooms in the 23 hospitals in the sample

	Weekdays		Weekends	
	Day	Evening	Day	Evening
Number of rooms open	243	164	120	114
Proportion of rooms open ^a	92%	62%	45,5%	43 %
Number of hours of potential use	160	160	64	64
Average rate of use of open rooms ^b	46%	9%	8%	6 %
Average number of rooms per hospital	11,5	11,5	11,5	11,5
Average number of rooms per hospital in desired use ^c	6,5	0,86	0,56	0,39
Rate of use of available capacity ^d	56,5%	7,5%	4,8%	3,4 %

Notes:

- a. An operating room was considered open when it had a rate of use above zero.
- b. The rate of use is defined as the number of hours used as a proportion of potential opening hours.
- c. Based on the average number of 11.5 operating rooms per hospital, with rates of opening and use of open rooms corresponding to the data in the table. The desired rate of use is 75%.
- d. Based on the total number of rooms (whether open or not) and on the desired threshold of use (75%), which explains why the proportion may be higher than the average rate of use.

facility and equipment maintenance).¹⁵ This rate of use of the 243 operating rooms open on weekdays amounts to the use of 6.5 rooms per hospital on average at the desired 75% threshold of use.¹⁶

As for the other shifts, the data gathered show that use of operating rooms is minimal for weekend shifts and for evening shifts, both on weekdays and on weekends. As shown in Table 1, 62% of rooms are open weekday evenings, but they are used at only 9% of their capacity. To illustrate this, it amounts to using less than one room (0.86) per hospital on average during weekday evening shifts. The underuse of operating rooms is even greater on weekends. The opening rate falls to about 45%, while the rate of use fluctuates between 6% and 8%. These data suggest that an average of 0.56 rooms per hospital are used during day shifts and 0.39 on weekend evening shifts.

Operating rooms are thus largely and systematically underused. Part of Quebec’s most modern and most substantial infrastructure is not used at full capacity. Failure to use nearly 30% of

Operating rooms are largely and systematically underused. Thus, part of Quebec's most modern and most substantial infrastructure is not used at full capacity.

operating rooms’ desired time of use on weekdays (rising above 66% for evenings and weekends) represents a sizable cost in the form of idle infrastructure. This does not even take account of the 8% of operating rooms that are closed at all times. The typical cost of equipping an operating room varies from \$450,000 for a general surgery room to \$1,150,000 for a partially automated endoscopic surgery room.

Several reasons may explain this underuse. For example, most hospitals keep a room free at all times for surgical emergencies, suggesting that it is not used at full capacity. The rate of use of such rooms thus varies according to the number of emergency surgeries performed in a given period. A large part of the underuse of operating rooms may also be due to the financial and regulatory framework imposed by the Department of Health and Social Services. Under the current financing formula, the department issues an overall budget envelope to regional agencies. Budget choices mean that the government may not finance all health care services that could be offered within a region.

The regional agencies then distribute the budget envelope among the hospitals in their territories, and the hospitals decide what share of their budgets to allocate to operating rooms. Management at an institution that receives a smaller envelope than necessary to finance all its services thus has to choose between maintaining a certain number of rooms closed or spreading the operating room budget among all rooms and using them less intensively. Some institutions may thus divide the overall surgery budget over a greater number of operating rooms than are effectively financed by the province. This practice may have the effect of increasing the opening rate of rooms and reduce their rate of use.

Next, some people in health care circles say a shortage of human resources in the health care field raises the pressure on hospitals. Not only do staff shortages make themselves felt within operating blocks, but they may also affect services before and after surgical operations. This situation may reduce the number of operations that can be performed. The shortage of human resources may also be explained in particular by a lack of flexibility in staff management. The proliferation of private clinics and the emergence of partnerships between them

15. Dominique Tonneau and Alain Lucas, *Gestion et organisation des blocs opératoires dans les hôpitaux et les cliniques*, 2006, Mission nationale d’expertise et d’audit hospitalier, p. 11.

16. Based on an average of 11.5 operating rooms per institution, with a 92% opening rate and a 46% rate of use of open operating rooms.

and public hospitals may be a reaction to the lack of flexibility in management in the public network.

The inefficiency of additional government financing

While there is widespread demand for higher government spending on health care to shorten waiting lists, it can be observed that the increase in program spending has not had the desired impact on waiting times. The government has boosted funding for the Department of Health quite considerably in recent years without eliminating waiting lists.

The Quebec government's total program spending (excluding debt service) grew at an average pace of 4.4% a year from 2000-2001 to 2006-2007, while program spending on health care grew by 6.4% a year on average over the same period. Since the start of the decade, health care spending has been growing each year at the same pace or more quickly than total program spending for all departments, except in 2005-2006 (see Figure 1).

In 2006-2007, program spending in health care swallowed more than 43% of the Quebec

Waiting times changed relatively little despite a major increase in government financing for the health care and social services network.

government's total program spending. For the 2007-2008 fiscal year, the treasury board is expecting this figure to reach 44% (or \$23.8 billion out of total program spending of \$53.8 billion).¹⁷ In 2007-2008, spending growth in health care will account for two-thirds of the growth in the government's program spending.¹⁸

Conclusion

Waiting times to visit medical specialists for treatment changed relatively little in Quebec between 2003 and 2007 despite a major increase in government financing for the health care and social services network. Meanwhile, our investigation reveals that operating rooms are systematically underused. This raises a fundamental issue: how to increase the yield of this excess of infrastructure.

In brief, if it were possible to increase the amount of work provided by existing staff in the health care field,¹⁹ greater use could be made of the material resources that currently sit idle in the Quebec health care network. A greater number of operations could then be performed, with patients benefiting from faster treatment.



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17. Treasury board, *2007-2008 Expenditure Budget*, Volume III, p. 12 and calculations by the author.

18. *Idem*.

19. As mentioned previously, a future Economic Note will deal with this matter.