

Delivering timely surgery in Canadian hospitals

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Does delaying emergency surgery increase the risk of death and other adverse outcomes following that surgery? Rigorous intervention studies on time to surgery do not yet exist; available data from observational studies are limited by profound selection biases. For example, it isn't easy to say why one patient with a fractured hip will have surgery on the day of admission, while another patient in the same hospital waits three or more days. Presumably, persons waiting longer for emergency surgery also have other serious problems that delay a quick operation that are themselves risk factors for bad outcomes, such as unstable heart disease, dementia and social disadvantage. In the absence of large controlled trials,¹ the findings of a linked study by McIsaac and colleagues² provide the most credible evidence to date that longer delays to emergency surgery are harmful.

By addressing the limitations of previous studies — measuring time to surgery from the time of operating room booking, rather than time of injury or time of admission, and by carefully accounting for medical status and other patient characteristics — McIsaac and colleagues avoid some of the selection and measurement biases that plagued earlier studies. Nearly 20% of patients in their study waited longer for surgery than the urgency-based interval defined by the hospital. Their risk of death in hospital was nearly 60% higher than those who had timely surgery (4.9% v. 3.2%), and there were corresponding associations with increased length of stay and hospitalization costs. This would seem to suggest that waiting longer than recommended for emergency surgery is, in fact, a bad thing. However, a much thornier question is “What can be done about it?”

Here, the results of the linked study offer an important clue. Among patients in whom a reason for delay was documented, 86% of delays were unrelated to patient factors, but instead were due to so-called “system” delays: pre-emption by more urgent procedures, or unavailability of a surgeon or physical resource, such as an open operating room. These findings will ring true for many who have worked in an operating room in a Canadian hospital. Global hospital budgets in an era of constrained public financing force surgical departments to strive for maximum efficiency; most optimize utilization of operating rooms and staff at maximum capacity for elective surgery, while assiduously avoiding any unbudgeted activity. “Free” staffed operating rooms are

KEY POINTS

- Delays in the provision of emergency surgery are caused mostly by “system” factors, and likely lead to adverse surgical outcomes.
- Delays from lack of availability of a surgeon to operate can be minimized by alternate models of team-based surgical care.
- Potential downstream cost savings from avoiding surgical delays are not easily appreciated, owing to the typical practice of managing finances of perioperative services and medical/surgical wards separately in Canadian hospitals.
- Innovative strategies to reduce the cost of surgical care may free up additional resources for operating rooms, thereby reducing delays for emergency surgery and relaxing other constraints on surgical activity, such as cancellation of elective surgery.

scarce in Canadian hospitals; patients waiting for emergency surgery are competing for resources with other surgical patients, both elective and emergency. The tacit playbook for operating room management in this environment is a combination of juggling case order according to patient acuity, escalating staffing when absolutely necessary and, during daytime hours, cancelling elective scheduled surgery.³

Some reasons for delays will be easier to manage than others. More than one-quarter of delays in the study were owing to unavailability of a surgeon, a problem that might seem surprising, but is a result of the historical system by which individual surgeons assume responsibility for the care of a particular patient for an entire episode of care. A surgeon can be in only one place at a time. However, emerging team-based models of surgical care, such as acute-care surgery services and some specialized clinical programs (bariatric surgery,⁴ for example), have shown that this traditional model of surgery is not necessary for the provision of high-quality and patient-centred care. Groups of surgeons pooled into teams, with provisions for cross-coverage and escalation, are better equipped to deal with the unpredictable nature of emergency surgery than a specific solo practitioner who may be occupied elsewhere at the moment a patient needs to be in the operating room.

The linked study also highlights a paradox that bedevils managers of surgical services. Modestly increasing resources to staff

operating rooms for emergencies ought to be compensated by downstream cost savings from avoiding a longer hospital stay and postoperative complications. Yet hospitals don't "feel" the savings from reducing a patient's length of stay if a newly freed hospital bed is filled immediately by the next patient waiting in the emergency department. Separate management and accountability of perioperative services on the one hand, and medical/surgical wards on the other, means that savings cannot be appreciated. Operating room managers defend their budgets by capping expenditures on scheduled and emergency care, thereby shifting the costs to other hospital units. Hospitals can spend thousands of dollars on a prolonged hospitalization to save the few hundred dollars it would cost to keep an operating room running late. Configuring financial centres so that all costs related to a patient's episode of surgical care fall under a single sphere of accountability, and shifting away from global budgets to sensible funding strategies that pay for a complete episode of care,^{5,6} could solve this problem.

Finally, perioperative services departments in Canadian hospitals must transform themselves from cost centres to profit centres if they want the favoured status enjoyed at hospitals in the United States. Because labour costs constitute the bulk of the hospital budget and cannot be reduced easily, opportunities for savings must focus on smaller expense categories, such as supplies and equipment, and on reducing the need for inpatient hospital care altogether. Surgical implantable and disposable products — such as joint implants, prosthetic mesh and energy devices — are expensive, and many provide little or no incremental benefit over far less costly alternatives.^{7,8} Current procurement strategies do not promote competition for value; creating incentives for providing low-cost care, by preferentially assigning hospital resources to services or providers based on how little they cost, is a promising approach.⁹ And emerging mobile technologies¹⁰ that substitute for in-hospital monitoring and case-management functions will soon transform common inpatient procedures — like joint replacement — into ambulatory surgery. This will help to free up costs currently consumed by hotelling and catering functions of hospital wards for more strategic purposes, such as additional elective and emergency operations.

Life-changing and cost-effective interventions are provided in operating rooms every day. Resource and logistical challenges can be addressed so that tactical manoeuvres — delays in providing emergency surgery and cancellation of elective surgery — do not continue to threaten patients' experience of care in Canadian hospitals.

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