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Research

Patient, family and professional suggestions for pandemic-related surgical backlog recovery: a qualitative study

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Abstract

Background: Surgical shutdowns related to the COVID-19 pandemic have resulted in prolonged wait times for nonemergency surgery. We aimed to understand informational needs and generate suggestions on management of the surgical backlog in the context of the ongoing COVID-19 pandemic through focus groups with key stakeholders.

Methods: We performed a qualitative study with focus groups held between Sept. 29 and Nov. 30, 2021, in Ontario, with patients who underwent or were awaiting surgery during the pandemic and their family members, and health care leaders with experience or influence overseeing the delivery of surgical services. We conducted the focus groups virtually; focus groups for patients and family members were conducted separately from health care leaders to ensure participants could speak freely about their experiences. Our goal was to elicit information on the impact of communication about the surgical backlog, how this communication may be improved, and to generate and prioritize suggestions to address the backlog. Data were mapped onto 2 complementary frameworks that categorized approaches to reduction in wait times and strategies to improve health care delivery.

Results: A total of 11 patients and family members and 20 health care leaders (7 nursing surgical directors, 10 surgeons and 3 administrators) participated in 7 focus groups (2 patient and family, and 5 health care leader). Participants reported receiving conflicting information about the surgical backlog. Suggestions for communication about the backlog included unified messaging from a single source with clear language to educate the public. Participants prioritized the following suggestions for surgical recovery: increase supply through focusing on system efficiencies and maintaining or increasing health care personnel; incorporate patient-centred outcomes into triage definitions; and refine strategies for performance management to understand and measure inequities between surgeons and centres, and consider the impact of funding incentives on "nonpriority" procedures.

Interpretation: Patients and their families and health care leaders experienced a lack of communication about the surgical backlog and suggested this information should come from a single source; key suggestions to manage the surgical backlog included a focus on system efficiencies, incorporation of patient-centred outcomes into triage definitions, and improving the measurement of wait times to monitor health system performance. The suggestions generated in this study that may be used to address surgical backlog recovery in the Canadian setting.

The COVID-19 pandemic caused a global disruption to essential care, with profound impacts on wait times for elective (nonemergent) surgery. The true scale of the surgical backlog remains unknown; the Canadian Institute for Health Information reported 560 000 fewer surgeries performed across Canada (excluding Quebec) from March 2020 to June 2021,[1] and the Science Table COVID-19 Advisory for Ontario and modelling consensus tables from an equivalent prepandemic calendar time period estimated a backlog of 257 536 cases as of April 2021 in Ontario alone.[2] Importantly, available estimates do not encompass upstream effects of diagnostic delay[3] and access to care, nor do they consider the number of Canadians on surgical wait lists before the pandemic.[4,5] Historic initiatives to reduce surgical wait times have included funding incentives, service expansion and outsourcing, performance management and wait times monitoring for priority procedures.[6] Governmental funding has been instituted as a means to address the pandemic-related surgical backlog and ensure provision of care for specific cases (e.g., cancer surgery). However, these incentives may negatively affect patients awaiting certain procedures (e.g., incentives exist for hip and knee surgery but not ankle surgery).[7]

Strategies to address the surgical backlog must therefore consider inequities that have been built inadvertently into the

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current system[8,9] and further exacerbated by the pandemic. Suggestions to guide equitable surgical recovery in Canada are needed. Engagement of key stakeholders to plan and improve health services, as well as those most affected by surgical cancellation and delays — patients and their families[10–13] — is imperative to guide an equitable recovery strategy. Given the need to address the pandemic-induced surgical backlog,[7] lack of insight on how to do so[6,14–16] and benefits of engaging stakeholders in health system planning,[10–13] we aimed to generate suggestions on how to optimize communication and management of the surgical backlog in the context of the ongoing COVID-19 pandemic through focus groups with surgical leaders and patients and their families. This knowledge could be used to inform strategies for surgical backlog recovery in Canada.

Methods

Study design and setting

We conducted this study in Ontario from Sept. 29 to Nov. 30, 2021. The population of Ontario was estimated to be 14.83 million people in 2021,[17] and in the year before the pandemic over 640 000 surgical procedures were performed across the province.[18] All nonemergent surgery was temporarily stopped on Mar. 15, 2020, until May 26, 2020, and again on Apr. 19 to May 20, 2021. After both shutdowns, nonemergent surgery was gradually resumed.[19]

We employed a qualitative approach to explore stakeholder views on managing the surgical backlog.[20] We used basic qualitative description, which is not based on and does not generate theory.[21,22] This approach is widely used in health services research to gather explicit accounts of lived experience and insight on preferred solutions to problems.[23] We conducted focus groups, which can generate richer conversation than 1-on-1 interviews, via interactive, synergistic discussion about complex issues.[24] We used the Consolidated Criteria for Reporting Qualitative Studies (COREQ) checklist to promote explicit and comprehensive reporting.[25]

Participants and recruitment

We used convenience sampling to recruit health care leaders, patients and their family members for our study. We considered patients who had or were waiting for surgery between March 2020 and the time of recruitment and their family members who were adults aged 18 years or older and living in Ontario to be eligible for the study. Eligible health care leaders were nurses, surgeons and administrators (i.e., chief executive officers) with experience and influence overseeing the organization and delivery of surgical services in Canada. We recruited patients and family advisors through the Public Advisory Council at ICES, which has more than 200 patient subscribers,[26] where the lead authors (D.G. and A.N.S.) are appointed. The coordinator at ICES circulated an email to advisors, instructing them to contact the study coordinator (A.M.S.) if they or someone they knew were interested in participating. We recruited health care leaders from the authors' professional networks and through snowball sampling to achieve a diverse range of geographic (rural and urban), hospital (tertiary and nontertiary centres) and specialty (among surgeons) perspectives. We aimed to involve a minimum of 30 participants, with 6–8 per focus group.[24] Patients and family received a $70 gift card as a thank you for their participation.

Data sources

We developed a semistructured focus group guide (Appendix 1, available at www.cmajopen.ca/content/11/2/E255/suppl/DC1) via research team discussion and additional minor refinements to further clarify questions after the first 2 focus groups. We derived the questions and prompts from the study objectives and 2 complementary frameworks. The Wennberg framework was first developed in 2020 and describes 3 broad categories of approaches for procedure wait time reduction: supply, demand and performance management.[6] We chose this framework to describe the characteristics of strategies suggested by participants for addressing the surgical backlog. The Powell framework was first published in 2012 and was rigorously developed based on a systematic review of research on available strategies for improving health care delivery and associated outcomes.[27] It includes 71 strategies aimed at different levels (e.g., patient, clinician, organization and health care system). We chose this framework because it offered a comprehensive way to categorize the strategies suggested by participants.[27]

Data collection

Owing to pandemic restrictions, we conducted virtual focus groups. During the focus groups, the lead authors (D.G. and A.N.S.) delivered a brief presentation of the historical and political context. A third-party professional facilitator posed broad questions, invoking additional prompts as needed: How has COVID-19 affected surgery?; What key messages are you getting about the surgical backlog?; What information should be communicated about the backlog?; and What strategies do you recommend to increase supply, decrease demand and optimize performance management? The focus groups were audio-recorded and transcribed via Zoom, then reviewed by a research assistant (A.S.). Interviews were stopped after we reached informational saturation, assessed by the research team through discussion of themes.

Data analysis

J.R. (MSc-trained research associate) and A.R.G. (PhD-trained senior author with 16 years of qualitative research experience) derived the themes inductively by thematic analysis of the transcripts, using Excel to organize data.[28,29] They independently analyzed 1 patient and family and 1 health care leader transcript to identify and code all themes, then compared and discussed themes to create a codebook of themes and exemplar quotes (level 1 coding).[30] The research associate (J.R.) analyzed the remaining transcripts according to the codebook. All data were reviewed by A.R.G., who expanded or merged themes as needed to refine the codebook (level 2 coding). Other senior authors (D.G. and A.N.S.) independently reviewed all data to verify the themes. A.R.G. also summarized data in tables, then mapped themes to the Wennberg[6] and Powell[27] frameworks.

For example, some participants suggested shifting certain procedures out of hospital, which we mapped to the "decrease demand" component of the Wennberg framework; and some participants suggested performing local needs assessments, which we mapped to the "plan strategies" element of the Powell framework. This mapping showed structures, processes, desired outcomes and suggested strategies to achieve improved outcomes but also showed gaps viewed by participants as the most important. The entire research team reviewed all data.

Ethics approval

This study was approved by the University of Toronto Research Ethics Board (No. 41329).

Results

We held 7 focus groups (2 patient and family, 5 health care leaders) between Sept. 29 and Nov. 30, 2021, after which informational saturation was reached. Duration of the focus groups ranged from 62 to 102 minutes. Eleven patients and family members and 20 health care leaders participated in focus groups. The health care leaders included 7 nurses in surgical program leadership roles; 10 clinicians or surgeons (otolaryngology, gynecology, vascular, thoracic and general surgery); and 3 nonclinician administrators (Table 1).

We explored 3 main issues: impact of communication about the surgical backlog; suggestions for communication about the surgical backlog; and suggestions for surgical backlog recovery. Key themes for each area of discussion included the lack of information and lack of guidance during the waiting period; the need for a single unified source of information and use of clear language when communicating wait times to the public; and prioritization of system efficiencies and preservation of the workforce, incorporation of patient-centred outcomes into triage definitions and improving reporting of metrics to measure the success of surgical backlog recovery.

Impact of communication about the surgical backlog

The overarching theme from all participants pertained to the lack of information about the surgical backlog, and the lack of guidance for both the public and providers during the waiting period (Table 2). Patients and family described waiting for months with no information about when their procedure might take place and inability to get answers by telephone, email or on hospital websites. This led to frustration, inability to make life or family plans, anxiety and depression as a result of disabling conditions, and concern about disease progression and survival. They experienced anxiety when told that their surgery could be cancelled at any time given the uncertainty and related concern of being forgotten if they were bumped, something that was reported to have happened to some participants. Patients and family received messaging that COVID-19 was prioritized over other conditions and, as a result, experienced guilt if they did get treatment, confusion when they learned that some patients were given treatment and frustration at being considered less important than patients with COVID-19.

Health care leaders said that the lack of information from government or hospital leadership gave them little time to prepare for ramp-up or shutdown of services, confusion when information was conflicting, a lack of insight on strategies or funding to support government directives and an inability on their part to provide patients with guidance or assurances. Health care leaders were told that rates of procedures were back to normal, although they were still struggling to work through the backlog of surgeries and uncertain about how to prioritize them. Some health care leaders noted that the government was promoting a single or unified approach to managing the backlog but did not view this as feasible given the unique needs and resources of different hospitals and regions.

Table 1: Demographic characteristics of focus group participants

Characteristic	No. of patients or family members *n* = 11	Health care leaders: No. of surgeons or nonclinician administrators *n* = 13	Health care leaders: No. of nursing surgical directors *n* = 7
Sex			
Male	6	7	0
Female	5	6	7
Geographic location in Ontario			
Central East	4	6	4
Central West	3	0	2
Eastern	2	3	0
Northern	0	0	0
Western	0	3	1
Other or not disclosed	2	1	0

Table 2: Impact of wait times communication themes and quotes

Communication received	Impact (theme and exemplar quote)
Patients and family	
Little or no information	Lengthy wait with no answers "I was expected to have my [colostomy] reversal surgery in May or June of 2020, and I never heard anything. And so I received a letter finally from the hospital saying we're doing the procedure in July. So then I heard from my surgeon saying we'll probably do your reversal surgery in November. And then I never heard, never heard, and then finally I received a letter saying I was having it in January so it was just waiting and not knowing and not receiving any information." — Patient 4, PT Focus Group 1 "There was no possibility of getting in touch with anyone, which was very anxiety producing, when you're left out in the unknown." — Patient 8, PT Focus Group 2 Inability to plan for life or family "The more informed the public is, they can make plans and decisions for their family, you know, just in case something happens." — Patient 10, PT Focus Group 2 Anxiety, depression "Because this incident caused me to have to abandon a lot of activity that I was doing, it created a lot of anxiety for me and a depressive state, because I had to change the way I was going about my life." — Patient 8, PT Focus Group 2 Concern about disease progression and survival "But for someone who's just been diagnosed with stage 4 cancer, time is of the essence and I just felt like a ticking time bomb." — Patient 10, PT Focus Group 2
COVID-19 has priority over other conditions	Felt guilty for receiving care despite COVID-19 priority "And I felt bad because I even though the incident was unexpected for me, I went to emerg that day." — Patient 8, PT Focus Group 2 Confusion about who was getting treatment "I would hear of people who had surgeries, and I was like okay, somebody did have a knee surgery, so I guess some people are getting in, but it wasn't clear to me how that was all being decided." — Patient 2, PT Focus Group 1 Frustration with being considered unimportant "I felt like it didn't matter that I was dying of cancer. I felt like I would only matter if I had COVID. Clearly not what anybody would say. But all these beds were being reserved for COVID patients in my case. Not even necessarily being used, they were sort of set aside for a potential case, when I'm sitting there with a definite need for it, and still being placed on the sidelines to wait." — Patient 10, PT Focus Group 2
Not safe to go to hospital	Concern about risk of untreated condition versus contracting SARS-CoV-2 "What you're going through is life-threatening. There's a chance you could contract COVID, but there's 100% chance you could have a fatal condition that needs immediate attention." — Patient 11, PT Focus Group 2 Patients avoid seeking care or turn to the private sector "It may make people hesitate to go in. The other drawback is they're going to do health care tourism if they can afford it. It's making a good case unfortunately for the private sector for those who can afford it." — Patient 8, PT Focus Group 2
Surgery could be cancelled at any time	Anxiety about being bumped and forgotten "I got bumped twice and then forgotten. If I hadn't called in September, I would not have gotten my procedure in October." — Patient 8, PT Focus Group 2
Health care leaders	
Little or no information	Little notice or time to prepare for ramp-up or shutdown "One of the most significant challenges is the starting and stopping. There's a lack of appreciation of all of the lead time that is required in order to get things done." — Health care leader 20, HCL Focus Group 5 Lack of information to convey to patients "Up until a few months ago, we were just telling patients you're just going to wait and we can't tell you exactly when we're going to get going again." — Health care leader 5, HCL Focus Group 2 Confused by conflicting information "Where it started to get complicated was where we were hearing ramp-up, ramp-up, but don't ramp-up. But you still have to staff ICU [intensive care unit], and you don't have staff, but still ramp-up and we'll give you money, but there's no staff." — Health care leader 16, HCL Focus Group 4 No direction or support from health system I know there was $300 million the government has announced. I don't know if all the hospitals got something or not. I hear informally, not a lot. And then there was a $35 million fund that I don't think anyone got. We applied, we haven't heard anything. — Health care leader 8, HCL Focus Group 2
Situation is back to normal	Still struggling with backlogs and how to prioritize patients "The, the messaging, we're getting recently though is that they're looking at our numbers and saying, oh you know you're pretty close to pre-COVID numbers in terms of what you're accomplishing so I think you guys are good. We're totally not good, it's not addressing the backlog at all because it's actually just kind of meeting even." — Health care leader 6, HCL Focus Group 2
Concern for staff well-being	Health care staff are getting no relief "A lot of mixed messages come from different leadership, either local senior leadership teams and/or government. Things like, everybody take care of themselves, try and get time off, yet the expectation is that you never have time off, and that you're always at the end of your phone and managing." — Health care leader 20, HCL Focus Group 5
Single or unified approach	Each hospital or region has unique needs "It feels like we're trying to act as a singular entity, yet the infrastructure doesn't exist to support that. We all have local collective agreements, local nuances to all of our staffing, local nuances to the type of work we do and don't do, because some of us are specialty hospitals and others are community teaching hospitals like mine." — Health care leader 20, HCL Focus Group 5
Lack of operating room time	Oncology procedures are prioritized over others "When we looked at the stats, the oncology patients are actually getting in on time so it seems like there's a disconnect between what's being said and what's actually happening. So at the level of nononcology cases, we're really working hard to try and advocate for that, but it's been challenging." — Health care leader 11, HCL Focus Group 3

Note: HCL = health care leader, PT = patient.

Suggestions for communication about the surgical backlog

Patients and family had suggestions for the content, mechanism and source through which information should be received; health care leaders primarily focused on the content and mechanism, including the importance of engaging surgeons in system-level decision-making (Table 3).

Patients and family said that the public should be provided with educational information about the cause of surgical delays so that they could better understand the situation and

Table 3: Suggestions for communication about wait times

Communication aspect	Suggestion (theme and exemplar quote)
Patients and family	
Content	Educate patients and the public — explain why there is a backlog "Even though time estimates may not be possible, just giving any qualitative information explaining what's going on, what the bottlenecks are, what's being attempted, what's making things more difficult. Definitely makes you more sympathetic, understanding and happier with the situation." — Patient 7, PT Focus Group 1 Regular updates of position on wait-list "Is it possible to see where your name falls on a wait-list? Without giving away other people's personal information. 'You are number 126 on a list of 341 hip replacements for 2021' and you can see your name, move up or down the list on a weekly or daily basis and you can track it so you can sort of have some sense of when it's going to happen." — Patient 10, PT Focus Group 2
Mechanism	Digital (email, phone app, website or patient portal) "I'm an email person. I would like to have had something that I could look back on to refresh my mind about why things were happening." — Patient 10, PT Focus Group 2 "Having an electronic patient record I can access and where I can see updates on my wait times would also be helpful." — Patient 8, PT Focus Group 2 Any means of communication is useful "It doesn't really matter. As a young person who's pretty tech savvy, I don't really care. I just need the information, whether it's through a portal, or my family doctor, or the surgeon's office or through the Ministry." — Patient 5, PT Focus Group 1 Two-way communication and an opportunity to ask questions "The people who are in charge of booking procedures are not necessarily empowered to take the time to explain things to you. They go through things very quickly. When you're stressed or anxious, it's hard to retain the information, and English is not my first language. Even if I'm a high-functioning person, and they want to be very efficient and book, book, book, it's like, I need you to tell me all this, and then send it to me in an email so I can review. And if I have questions, I can go and ask you or someone. Give me a resource that I can talk to. Because everything I was told was rapid fire 'you need to do this, you need to do that,' I was confused. And then they sent me a requisition and I didn't know what to do with them. So it was very difficult for me to have all of that thrown at me all at once, and no invitation to ask any questions." — Patient 8, PT Focus Group 2 Ensure equitable access to information among vulnerable or hard-to-reach groups that may lack technology (e.g., cell phones or Internet) "I think you need to find some equity in terms of how some of this information will be shared. One of the things to think about is how to reach patients of colour, Indigenous people, those who have, don't have access to electronics, or cell phones or emails. I think that should be said, definitely be at the forefront, as we think about communication strategies." — Patient 6, PT Focus Group 1
Source	Single group dedicated to communication "Having dedicated communication units solely devoted to communicating with patients and they're experts in that, they have the time to do it, it's their job." — Patient 9, PT Focus Group 2
Health care leaders	
Content	Educate the public — publish wait times and explain why there is a backlog "What we need from the Ministry is clear communication and that this is a very complex issue and is going to take somewhere between 2 and 4 years to even reasonably address what the backlog currently is, let alone what the wait-list was before the pandemic that many of us were struggling with." — Health care leader 6, HCL Focus Group 5 Disagreement: Cause fear, overload emergency services "It's going to cause fear and we're going to end up seeing patients coming through to emerg to try to get in, there is a risk for that. Our emerg is already backlogged and cases are coming in. I think there will be panic and fear." — Health care leader 4, HCL Focus Group 5 Communicate degree of uncertainty to mitigate expectations "More messaging around the fact that there is going to be a massive amount of uncertainty around this. And just because you have a snapshot of data that you think really represents the reality on the ground, when we know that there are many reasons why that data doesn't actually reflect what our day-to-day reality is. It may be easier said than done." — Health care leader 13, HCL Focus Group 3 Disagreement: feasibility not likely "Messaging to the public about expecting uncertainty in your health care is probably accurate. Although I must say I just don't see government actually doing that because they're all about certainty and providing the assurance, and the government would never come out and say 'Sorry folks, we don't know what's going to happen. We'll do the best we can,' although that's probably the reality." — Health care leader 10, HCL Focus Group 3 Refrain from using the word "elective" "If I could have any wish in the world right now it's to remove the word 'elective' from everyone's lexicon and change it to a word that has a better impact on the public." — Health care leader 10, HCL Focus Group 3 "We all had to come up with our own definitions of urgent or semiurgent." — Health care leader 14, HCL Focus Group 4
Mechanism	Engage surgeons in system-level decision-making "I think it's important that government keep the key stakeholders informed of what's going to be happening or and seek some advice from people in the surgical communities, because I find that some of the provincial tables are a little distanced from actual practice." — Health care leader 2, HCL Focus Group 1

that management of expectations and information could improve performance from a patient's perspective. They said that every patient should be privy to regular updates of their position on the wait list. Patients and family also said that any communication mechanism to report wait times would be useful including email, telephone applications, internet patient portals to medical records, other websites or verbal communication from a health care professional. Several patients and family said that information should be conveyed from a single, dedicated system-level group with skill in patient communication. They emphasized that sharing of information must be done in a way to reach vulnerable groups. Patients and family highlighted the need for 2-way communication and for resources they could consult to acquire additional information.

Health care leaders suggested educating the public to explain why there is a backlog and that clearing it might take years because of the complexity of the problem, and publish wait times, all with the aim of setting realistic expectations. Some health care leaders disagreed, suggesting that doing so would cause panic and result in overloading emergency services. Most health care leaders emphasized the need to refrain from using the word "elective," a term that minimizes the urgency of some procedures. Most health care leaders highlighted the need to engage surgeons in system-level decision-making, something they did not feel had happened to date, as this may lead to more feasible solutions.

Suggestions for surgical backlog recovery

The participants had many suggestions about strategies for surgical backlog recovery, including prevention of disease requiring surgery, shifting services out of hospital, sending patients to other jurisdictions, increasing the pool of health care professionals, improving or expanding services, wait list management, funding, and learning from other countries and past pandemics (Table 4). There were important differences between the suggestions of patients and family and health care leaders and discussion around specific concerns of some strategies; some of these concerns included maintaining quality of care, burdening other aspects of the health care system (e.g., emergency department) through earlier hospital discharge or shifting surgical services out of hospitals, and maintaining patient and surgeon autonomy (e.g., through centralized referral systems, alternate payment plans to surgeons) (Appendix 2, available at www.cmajopen.ca/content/11/2/E255/suppl/DC1).

Participants were clear that funding initiatives alone would not address the backlog; 1 participant stated: "You cannot pay your way out of this" [Health care leader 3 (HCL Focus Group 1)]. Within the Wennberg[6] framework (Figure 1), most participants felt that the following strategies should be key considerations: first, directing the focus on improving systems efficiencies, such as outsourcing surgeries to ambulatory surgery centres and same-day discharge, were seen as a high priority. Maintaining health care personnel and forward thinking to increase future system capacity was seen as a key priority; this included incentivizing entry into the nursing profession and increasing the number of operating room technicians and anesthesia assistants within hospitals. Second, incorporating patient-centred outcomes into triage definitions was highlighted to improve equity. Aspects such as time sensitivity and patient discomfort were emphasized rather than simplistic categorizations of "cancer" and "noncancer;" 1 surgeon pointed out that some types of thyroid cancers may safely be delayed without an impact on patient outcome. Third, the current performance management strategies such as reporting of wait times and performance targets for priority procedures were found to be lacking. Inequities in the current system were highlighted and will be further exacerbated if wait times for priority procedures alone are reported. All themes and quotes are included in Appendix 3, available at www.cmajopen.ca/content/11/2/E255/suppl/DC1.

Interpretation

We conducted focus groups with health care leaders and patients and their families to understand informational needs related to the pandemic-induced surgical backlog, and generate suggestions for improved communication and for an equitable recovery strategy. Participants expressed frustration with the lack of communication related to surgical slowdowns and ramp-ups and information related to an overall recovery plan. Patients and families felt that information was being withheld, whereas health care leaders related that they often received information at the same time as the public. During ramp-ups, health care leaders received messages that procedure rates were "back to normal" but felt that they were still struggling with a substantial backlog. All stakeholders offered suggestions for strategies to improve communication about and mitigate the backlog. Of all these strategies, most participants considered the following to be the most important to pursue: increase supply through focusing on system efficiencies and maintaining or increasing health care personnel; incorporate patient-centred outcomes into triage definitions; and refine strategies for performance management to understand and measure inequities between surgeons and centres.

Wennberg categorized initiatives that have been implemented successfully in the Canadian setting through increased supply, decreased demand and performance management.[6] When "increase supply" initiatives were discussed with the participants, it was acknowledged that the surgical backlog could not be addressed in a silo. Upstream effects, such as provision or increasing the supply of health care workers and support for primary care screening, and downstream effects, such as support for increased surgical volume (e.g., postoperative nursing care, programs to support same-day discharge) were discussed. A successfully implemented strategy to increase supply before the pandemic was moving low-risk procedures out of urban centres to community-based clinics and rural hospitals.[6] Since the burden of COVID-19 disease was greater in urban centres, a strategy like this would free capacity for high-risk procedures in tertiary care centres.[31] A similar strategy was proposed in the United Kingdom, where local and regional centres that were relatively protected from

Table 4 (part 1 of 4): Suggestions for strategies to manage wait times

Strategy	Suggestion (theme and exemplar quote)
Patients and family	
Prevent illness	Health promotion "Can we get more funding for physical activity in the general public so that people have access to gyms and training programs or whatever, and for health experts outside of the system who are not covered by OHIP [Ontario Health Insurance Plan] like massage therapists, physiotherapists, kinesiologists so that it doesn't cost as much to individuals." — Patient 8, PT Focus Group 2
Shift services out of the hospital	Provide support to patients while waiting "I wondered if there were ways to support people. Social work support, psychological support for people while they're waiting. Because the anxiety of waiting is horrible. And maybe that can be a possible way to help." — Patient 2, PT Focus Group 1 "If there's some arrangement that can be made that would satisfy them. And it wouldn't be dangerous. Such as providing payment for physiotherapy or transportation or home care or all these things to say, you know, if we can delay you 2 months, we could provide some support for you." — Patient 2, PT Focus Group 1 Provide treatment in community or at home "Looking at what needs to be done on-site versus what can be done in the community. And trying to think outside of the building and finding those solutions so that we're not always relying on the hospitals for that kind of care." — Patient 8, PT Focus Group 2 Provide support at home after early discharge "If you're looking at a surgical procedure that normally would keep someone after the procedure for 2 days, what are the resources in that person's area that can help them feel safe to go home after 1 day, and they have the phone number, name and email of the care provider that is going to check in on them." — Patient 8, PT Focus Group 2 Use private services "Use public–private partnerships or private hospitals coverage to expand capacity. We need different models to perform different types of surgeries." — Patient 2, PT Focus Group 1
Send patients elsewhere	Send patients out of province or country "Could we do a big push, just to catch up, of out-of-province care for all the people who have waited for more than, let's say, 10 months for something that really affects your life. And you're going to be flown out to another province or another country to get the care so that we can catch up to prepandemic levels." — Patient 8, PT Focus Group 2
Increase pool of health care professionals	Incentivize people to enter health professions "There's a shortage right now in the market, so I'm not sure if there is a way to maybe fund education for the health sciences to get more of these people into the funnel." — Patient 8, PT Focus Group 2 Redistribute Canadian health care professionals "COVID is not gonna last forever, hopefully, and ideas like reallocating doctors, redistributing within the country … might be viable." — Patient 7, PT Focus Group 1 Modify professional scope of practice "Train up staff that may not be as in demand as others for one reason or another, and have them redeployed into areas where they can cut through the backlog and other procedures." — Patient 7, PT Focus Group 1 Expedite licensing of foreign-trained clinicians "Streamlining the process for already-qualified physicians and surgeons from other countries, who are here to become certified to be practising medicine here." — Patient 10, PT Focus Group 2
Improve and expand services	Optimize efficiency and coordination "Schedule a surgery before scan comes back instead of waiting for the scans come back, you know that might save some time for sort of a placeholder appointment." — Patient 7, PT Focus Group 1 "Is there a way for us to optimize surgeons' time? I don't know what exactly happens at the day of life of a surgeon, but so that surgeons time is used in surgery as opposed to in administrative tasks." — Patient 10, PT Focus Group 2 Extend and expand services "All the areas like CT [computed tomography] scans and MRIs [magnetic resonance images] have to be open 24 hours a day." — Patient 3, PT Focus Group 1 "There's a huge need in the eye care side of things. My mother-in-law got her cataracts done at a private clinic a few years ago and she didn't wait. So, can we expand that to reduce the backlog in hospitals and put more people through?" — Patient 8, PT Focus Group 2
Manage the wait-list	Use data to assess waits and bottlenecks "They may want to track and find the bottlenecks, start to finish, in the process of getting a surgery. It also would determine times … this typically takes 6 weeks, this takes 6 months." — Patient 1, PT Focus Group 1 "Predictive analytics. Leveraging that to model and manage the ORs [operating rooms] and the access and expected wait times." — Patient 8, PT Focus Group 2 Reassess how procedures are prioritized "Patients and families like ourselves get confused with the words unnecessary, elective, scheduled. A heart surgery may not be considered necessary, but might be more urgent and may not be elective. So defining unnecessary based on patient family perspective will be very important." — Patient 6, PT Focus Group 1 Centralized referral If we say that person has 20 people on the wait-list and you only have 7, is there any way that we divvy it up so that it can be a little bit more even to reduce the overall wait time?" — Patient 5, PT Focus Group 1

Table 4 (part 2 of 4): Suggestions for strategies to manage wait times

Strategy	Suggestion (theme and exemplar quote)
Funding	Physician fee for service "Pay per cut, if you will. The ones who are paid on salary, they'll do what they can within the time that they're there. Whereas the ones that are per surgery … incentivize them somehow to do more." — Patient 8, PT Focus Group 2 Solicit private funding or donors "We need to be innovative by working with private sectors to improve clinical workflow, because the money is there. One organization got $25 million to build a new building." — Patient 6, PT Focus Group 1
Learn from other countries and past pandemics	"For some reason, they threw out anything they learned from SARS [severe acute respiratory syndrome] or H1N1 [influenza A virus subtype], all those mini pandemics, and went with some new model that really didn't help anybody." — Patient 1, PT Focus Group 1 "Different countries have faced similar problems or continue to face similar problems. Are we hooked in to these global initiatives, seeking out best practices?" — Patient 9, PT Focus Group 2
Health care leaders	
Prevent illness	Health promotion "The pandemic brought us back 10 years with all of the prevention campaigns that we had with regards to colonoscopy, colposcopy, a lot of those pieces. If the Ministry, government, whoever, somebody could help us get this word out and start to do some of that advertising on media, social media on TV. That sort of stuff would definitely help because prevention is going to definitely be the key to managing and predicting what our volumes are going to be like." — Health care leader 16, HCL Focus Group 4
Shift services out of the hospital	Provide treatment in ambulatory and community settings "There are surgeries that absolutely need to be done in acute centres, 100 percent, and there are other procedures that don't. The alternate health facility model allows for those procedures that don't need to be done in hospitals and take up valuable OR capacity, and have them done in the community, things like colonoscopies and cataracts." — Health care leader 8, HCL Focus Group 2 Provide support at home after early discharge "We have a virtual ward of nurses that call and follow up. So there's a possibility there's other pathways of patients that we could theoretically move through the hospital experience faster if we have the proper supports, which would require community support, but also this remote care monitoring piece as well." — Health care leader 15, HCL Focus Group 4 Move COVID-19 screening to primary care or community "I had the COVID assessment centre under me and I just transitioned it to an external provider so we could recapture our staff." — Health care leader 20, HCL Focus Group 5 Use private services "There's already lots of private facilities that are probably being underutilized with staffing and rooms, etc. And we have done that in our province before, where we've used private facilities, but they're funded by the government to do certain cases." — Health care leader 11, HCL Focus Group 3
Send patients elsewhere	Send patients out of country "Funding them to go out of country." — Health care leader 11, HCL Focus Group 3
Increase pool of health care professionals	Need more staff of all specialties and staffing prediction models "We often talk about OR nurses, they're critical for sure, but you can't do anything without recovery room, you can't do anything without day surgery nurses. You can do some things without increasing inpatient beds like your same-day optimization of joints and gyne patients and things like that. You need more diagnostic imaging techs. It's not just 1 particular professional that you need. And I think there's a lack of understanding of that." — Health care leader 20, HCL Focus Group 5 Employ alternative roles and expand scope of practice "Whether it's physician assistants, whether it's nurse practitioners with the anesthesia training, RNs [registered nurses] that can administer anesthesia with the supervision of anesthesia, and really looking at new models of care that don't rely on 1 particular health profession but a coordinated team to increase the throughput through the ORs." — Health care leader 8, HCL Focus Group 2 "Scrub techs was what I was used to working with, and they're incredibly good. We did address this briefly, sort of midpandemic, and it's a land mine. I didn't realize it was going to be, I just thought it was a normal thing to discuss. It's unions and this and that. It has to come from top down because when we try to address it from within, all it did was create more conflict and low morale, and it actually took an unstable system and made it a little bit worse briefly, so we kind of abandoned it." — Health care leader 6, HCL Focus Group 2 Provide on-the-job training programs "We've put an in-house training program where their tuition costs are covered, they don't take an income hit and it's expedited so they're ready to work in less than 6 months." — Health care leader 9, HCL Focus Group 2 Increase rate or volume of health professions training "We're going to need to train more nurses, we're going to have to gear up the schools that are training them." — Health care leader 3, HCL Focus Group 1 Incentives and support to retain nurses "How can we retain nurses? We've done stuff here that we never wanted to do before. If you look at the new research literature of leadership in crises, you need to increase your flexibility. We have no flexibility in health care because do more for less has always been one of our things: be efficient, pick up another unit, what's the big deal. And I think nurses are tired." — Health care leader 18, HCL Focus Group 5 Expedite licensing of foreign-trained clinicians "Try to get internationally graduated nurses, try to adapt them to the Canadian system with some timely consideration to eventually help the system." — Health care leader 1, HCL Focus Group 1

Table 4 (part 3 of 4): Suggestions for strategies to manage wait times

Strategy	Suggestion (theme and exemplar quote)
Improve and expand services	Extend and expand services "We're talking about surgery, but we should also take into consideration all the diagnostics and support services that go along with the surgical backlog which is imaging, the CT scans, the MRI, labs. And so if we really want to increase the surgical flow, we also have to look at those support services that enable those procedures to get done." — Health care leader 8, HCL Focus Group 2 Increase bed capacity "We have areas in the hospital that could be used that were patient care areas. So focus on being able to expand hospital beds because there are patients who just can't get home. Expanding that even temporarily until we get through the backlog so that we can get through the patient cases." — Health care leader 6, HCL Focus Group 2 "Patients who need to go home, they go home, or they get charged every day. Because we spend half our day arguing with patients and their families about why they don't want to go home. Now I know it sounds a little out there, but that's where we're at right now." — Health care leader 18, HCL Focus Group 5 "People don't know where to go, there's nowhere in the system to go to. So a navigator coordinates all this and it has decreased the ED admissions. But if every big diagnosis like CHF [congestive heart failure] or renal had a navigator to work with the physicians and the patients and the community services, the system would function better." — Health care leader 18, HCL Focus Group 5 Find alternate sources for equipment and supplies "One of the things that concerns me about the push to just increase volumes is a huge supply chain issue that we are actually starting to experience now. There's a huge backlog of casting, materials, crutches, surgical gloves. So unless there's alternatives for sourcing strategies, we will probably not be able to operate." — Health care leader 16, HCL Focus Group 4 Optimize efficiency and coordination "Improve the efficiency in the OR. They [surgeons] spend almost as much time waiting for the OR to be turned over and ready for the next patient as doing the procedure. And that's a very inefficient use of resources." — Health care leader 2, HCL Focus Group 1 "The right case with the right surgeon in the right location. Not all cases need to be the tertiary care centre and yet people are travelling. There should be better systems to establish what the needs and demands are in certain regions and what's available there and prevent all that traveling to tertiary care centres." — Health care leader 11, HCL Focus Group 3 Monitor surgeon upskilling and compliance with standards "Hysterectomy has been a procedure that's basically routinely done laparoscopically now, that change happened in the last 10 years, 15 years, but there's still some surgeons that just didn't bother to train to do it and are still doing it abdominally requiring more resources, more postoperative time." — Health care leader 11, HCL Focus Group 3
Manage the wait-list	Reassess how procedures are prioritized and funded "And the other issue that we see is that the government is for the last at least 10 years has grasped onto knees, hips and cataracts as the only surgeries that need to be prioritized, and all of us recognize that those are not the only surgeries that are performed in [province]." — Health care leader 2, HCL Focus Group 1 Verify who is really on the wait-list "We've actually embarked on a process to verify the actual number of patients on the wait-list. We're more than halfway through that systematic process and it turns out we may have somewhere between 30% and 40% of names on our wait-list who are listed as backlogged patients who actually are no longer in that pipeline." — Health care leader 9, HCL Focus Group 2 Analyze wait-time data accurately "When we're looking at data, really look at apples-to-apples comparison of data. Wait times look very short, it almost doesn't seem like there's a concern, but we're not looking at all indicators and all pieces of the puzzle. So really having a comprehensive scorecard per hospital that takes into account the wait times but also other procedures." — Health care leader 16, HCL Focus Group 4 Provide surgeons with data on their wait times "We used to have dashboards that went out to individual surgeons about their activity. I think that has diminished since then. They were very effective because they told individual surgeons what was in their queue and what their wait times are. That information to individual surgeons, plus to the surgical leads, the surgeons-in-chiefs would be very valuable to help individual hospitals deal with their issues." — Health care leader 5, HCL Focus Group 2 Triage those on wait-list to other services for management "Interventional radiology can offer some procedures that avoid surgery. I think in the chronic pain world that's also, you know, there are some procedures that interventional radiologists or anesthesiologists can offer, but often the connections aren't there, so patients will be in a surgical wait-list but they can't access those other people. So if there was a more streamlined pathway and kind of guidelines about, you know, what you do first and what you can access, that would certainly relieve surgical lists." — Health care leader 11, HCL Focus Group 3 Restart wait-list counting "Stop counting, start from scratch. I remember sitting in a radiology presentation, they were talking about the backlog of mammography, and they were showing a slide that said by 2035, we will have caught up to less than 10 000 mammograms and I thought to myself how incompletely clinically significant that was." — Health care leader 13, HCL Focus Group 3 Centralized referral "I know that there was a centralized list for cardiac surgery that worked well. What we do, for example, is to say, 'you can wait 6 months with Dr. X or you can have Dr. Y in a month. Your choice." — Health care leader 18, HCL Focus Group 5

Table 4 (part 4 of 4): Suggestions for strategies to manage wait times

Strategy	Suggestion (theme and exemplar quote)
Funding	More funding for hospitals "Hospitals have been running on a 25th percentile year after year after year after year. So what is available to most departments these days is a fraction of what was available 25 years ago. This pandemic has just brought this to the rest of the public. They weren't affected previously, now they are. The answer is to start looking at better funding for hospital facilities." — Health care leader 2, HCL Focus Group 1 "Government needs to strategically fund a package program tailored to individual organizations for surgical recovery and that might look different site to site." — Health care leader 14, HCL Focus Group 4 Bundled care model "Bundled care works for certain procedures and specialties and it doesn't for others. So, pre-op, the procedure, post-op, which includes home care, and include primary care because I know primary care is not included in the current bundles. So that there is a price set for the entire journey of care and all the partners involved in that care. So the partners are jointly incentivized to get that patient with the best health outcomes, close to home." — Health care leader 8, HCL Focus Group 2 Physician funding models "We have excellent people, but they all work in their own silos; we are not integrated as a system. It becomes a turf war and a matter of losing business and revenue because we work fee per service. If we could take this step forward so that physicians work on an alternate payment plan and get rid of these petty concerns, maybe we can work towards really programmatic work rather than having our individual turfs." — Health care leader 9, HCL Focus Group 2 "Salaried. I believe in that for a whole number of reasons, being a female in surgery. So salaried for all surgeons would be great from my point of view, you can leave the female part out." — Health care leader 13, HCL Focus Group 3
Learn from past pandemics	'After SARS, I sat down just like we did now with people with the [organization] that the government asked with the same issues, 'what can we do, what can you learn from it.' And I think we learned a lot, but it all got forgotten after 17 years." — Health care leader 18, HCL Focus Group 5

Note: HCL = health care leader, PT = patient.

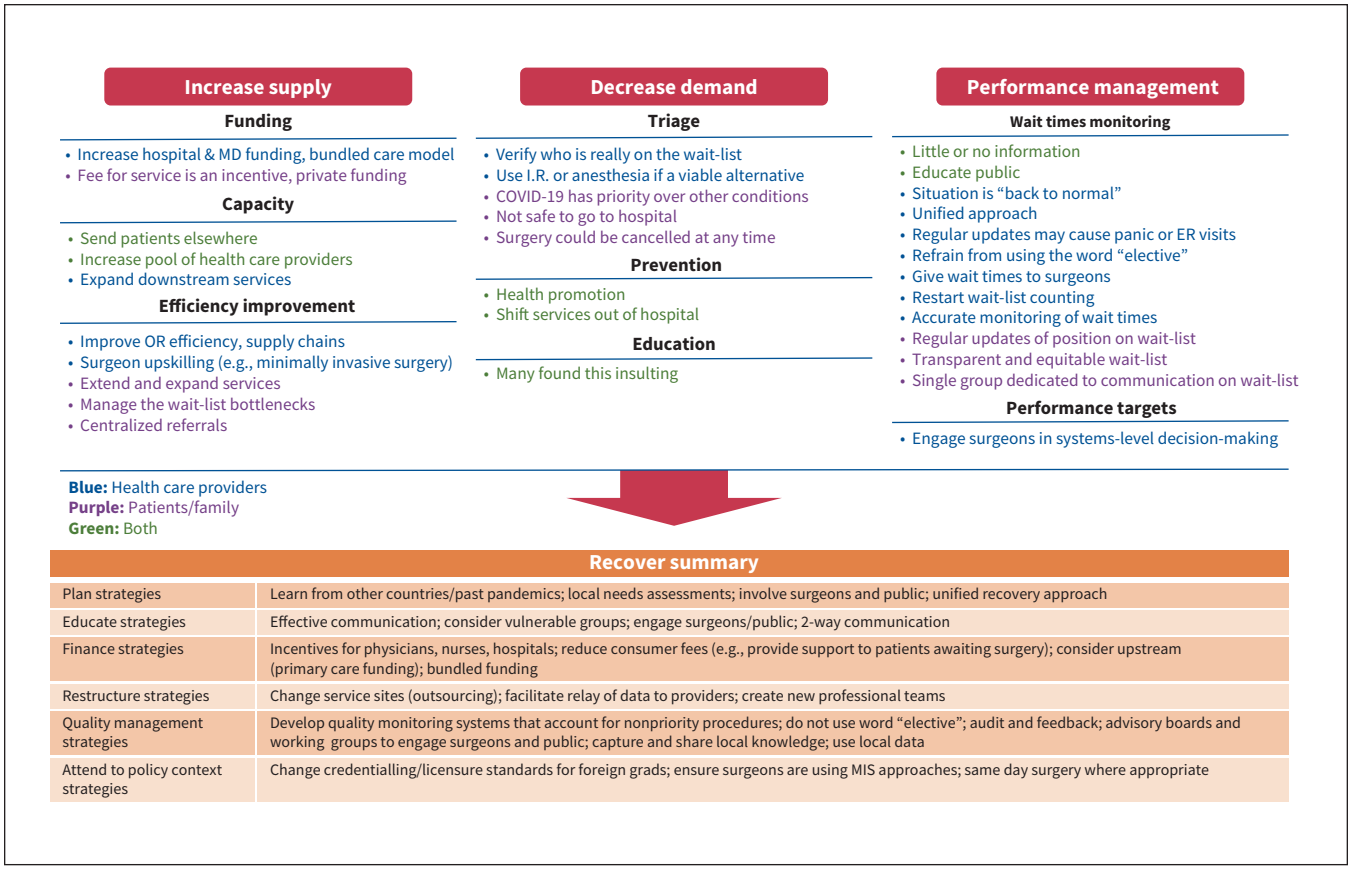

Figure 1: Summary of suggested strategies for surgical backlog recovery. Note: ER = emergency room, IR = interventional radiology, MIS = minimally invasive surgery, OR = operating room.

the disease burden of COVID-19 disease burden would provide ongoing surgical care.[32] These types of strategies are important to develop to maintain surgical care in the future, for subsequent COVID-19 outbreaks.[33] The importance of maintaining equity in access across demographics and specialties is a key consideration of any potential strategy.[32,34] Single-entry models and team-based care have also been proposed to ensure an equitable recovery strategy,[8] as well as the development of tools to estimate wait times within groups based on available resources.[35]

Strategies that patients and family were least accepting of were those related to decreasing demand.[6] They felt that nonemergent surgery and prevention strategies had been triaged behind COVID-19 throughout the pandemic, and the necessity of surgical care was being discounted. Performance management, which encompasses monitoring of wait times and performance targets, is an important aspect of recovery, but participants expressed concern over how this information was made available and how it affected other cases (e.g., while targets for priority procedures may be met, "nonpriority" procedures continued to wait). Health care leaders discussed that the current provincial monitoring of wait times did not adequately reflect their experience and were not adequately disseminated; for example, wait times for individual surgeons should be available to their hospital or division leads to understand inequities within departments that may be mitigated to lessen the impact on patients.

Policy strategies must consider local contextual factors and the disproportionate impact of the pandemic on some regions and hospitals. Therefore, future directions of this research will include a larger number of stakeholders from across Canada. Involvement of patients and family in our study raised several important issues that may also be considered to support those affected by the backlog; for example, patients understood that prolonged waits cannot be changed in many instances, but they suggested that provincially insured access to physiotherapy and other resources may be helpful for symptom management during the wait. We did not identify any previous studies that consulted patients and their families about strategies to manage surgical wait times. Although all of the systems complexities of surgical wait times may not be apparent to the public, it was apparent to them that the system is not equitable; transparent processes and communication was a key concern expressed by patients and family. Unified messaging from a single source and involvement of patients and professionals in shaping the recovery plan would increase transparency, particularly as we experience subsequent waves of the COVID-19 pandemic.

We used rigorous qualitative methods and complied with qualitative reporting criteria. Our findings are strengthened by the good congruence between patients and family and health care leaders who were interviewed.

Limitations

Our study is limited by the population interviewed, specifically people in health care leadership positions and patients who had or were awaiting surgery in Ontario and their families. Our convenience sampling strategy aimed to recruit a diverse sample of people who could speak to strategies to manage the backlog; however, not all regions and hospitals were equally affected by the pandemic, and, therefore, there are other perspectives that were not captured. In future research, we will aim to involve more stakeholders in ranking the most important recovery strategies. Finally, the suggestions represent the perspectives of patients and family and health care leaders but may not reflect the perspectives of other key stakeholders (e.g., policy-makers); other effective organizational strategies may not have been discussed.

Conclusion

We identified priority strategies for improving communication about and management of the surgical backlog through focus groups with key stakeholders. Improving equity through incorporating patient-centred outcomes into case prioritization definitions, maintaining health care personnel, and improving system efficiencies and monitoring with publicly available local data were identified as priority areas. Future work includes a Delphi consensus with a larger group of stakeholders to prioritize these suggestions. These strategies are applicable across Canada for managing the pandemic-induced surgical backlog.

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