

Canadian Expert Opinion on Breast Reconstruction Access: Strategies to Optimize Care during COVID-19

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Background: Breast reconstructive services are medically necessary, time-sensitive procedures with meaningful health-related quality of life benefits for breast cancer survivors. The COVID-19 global pandemic has resulted in unprecedented restrictions in surgical access, including access to breast reconstructive services. A national approach is needed to guide the strategic use of resources during times of fluctuating restrictions on surgical access due to COVID-19 demands on hospital capacity.

Methods: A national team of experts were convened for critical review of health-care needs and development of recommendations and strategies for patients seeking breast reconstruction during the pandemic. Following critical review of literature, expert discussion by teleconference meetings, and evidenced-based consensus, best practice recommendations were developed to guide national provision of breast reconstructive services.

Results: Recommendations include strategic use of multidisciplinary teams for patient selection and triage with centralized coordinated use of alternate treatment plans during times of resource restrictions. With shared decision-making, patient-centered shifting and consolidation of resources facilitate efficient allocation. Targeted application of perioperative management strategies and surgical treatment plans maximize the provision of breast reconstructive services.

Conclusions: A unified national approach to strategically reorganize healthcare delivery is feasible to uphold standards of patient-centered care for patients interested in breast reconstruction. (*Plast Reconstr Surg Glob Open* 2022;10:e4204; doi: 10.1097/GOX.0000000000004204; Published online 28 February 2022.)

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INTRODUCTION

Since the World Health Organization declared COVID-19 a global pandemic in March 2020, our healthcare system has suffered unpredictable and fluctuating threats on access and delivery of medical services affecting all Canadians.¹ For over 25,000 women in Canada diagnosed with breast cancer annually, health resource limitations are particularly consequential given the need for timely multidisciplinary consideration of surgery and adjuvant therapy.² To maintain adequate resources for critically ill patients, provincial governments restricted surgical services according to hospital capacity, resulting in a marked decrease in availability of operative time.^{1,3} For breast cancer patients in whom surgery is the mainstay treatment of choice, surgical care has been delayed and/or compromised.⁴ Breast reconstruction following tumor ablation is considered an integral and standard component of comprehensive cancer care, offering women facing mastectomy the choice of restoration. Despite its essential role, breast reconstruction was severely restricted during the pandemic, with irreversible long-term consequences for Canadian breast cancer survivors.^{3,5,6} Amidst robust vaccination programs, there are current and persistent strains on the healthcare system which demand continued efforts to efficiently deliver breast reconstructive services.^{3,4}

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To balance patient and societal needs, we propose evidence-based strategies to maintain the standard of care with the provision of breast reconstruction during the pandemic. We discuss how these recommendations can be applied according to hospital capacity and available resources. These recommendations were devised to optimize the ethical, safe, timely, and equitable provision of breast reconstruction in Canada during periods of severe healthcare resource restrictions. To enable generalized application, these strategies were devised with consideration of the global context and may be adapted to other regional jurisdictions.

METHODS

A national team of breast reconstruction experts were assembled by teleconference meetings from April 2021 to June 2021. Following review of current practice and delivery restrictions by regional jurisdiction, recommendation items were created according to identified impact on care and needs. Working groups were charged with literature search and compilation of published data according to the items of (1) purpose and value of breast reconstruction; (2) impact of the COVID-19 pandemic on breast reconstruction within national, international, and surgical contexts; and (3) development of guidelines and strategies for provision of reconstruction during the pandemic. Recommendations were developed following an evidenced-based consensus approach with expert review of literature and interpretation according to regional context for application of best practice standards, and modifications were made until consensus was reached by the team of experts.

SYNTHESIS AND RECOMMENDATIONS

National consensus based on evidence is summarized below according to recommendation topics with targeted questions and considerations.

What Are the Consequences of Omitting Breast Reconstruction during the COVID-19 Pandemic?

Immediate breast cancer reconstruction (IBR) is performed at the same time as the mastectomy, enabling women to begin restoration of their psychosocial well-being, resulting in measurable improvements in the quality of life of breast cancer survivors.^{7,8} This meaningful impact of reconstruction has led to provincial and territorial policies mandating insurance coverage for mastectomy-related reconstruction. Given advances in diagnostics and therapeutics, the majority of breast cancer patients transition into the survivorship phase, with expectations of normalcy as it relates to psychosocial, physical, and emotional functioning. Thus, a concomitant rise in IBR over the last decade, with a measurable 2.5-fold increase in Ontario,⁹ has led to demand surpassing care capacity in the Canadian healthcare system, preceding pandemic-enforced restrictions.

For women seeking breast reconstruction, IBR is only possible at the time of mastectomy. When IBR is not

Takeaways

Question: How can immediate breast reconstructive services be provided in an ethical, safe, equitable, and timely way during the COVID-19 pandemic?

Findings: Based on critical review and national expert evidence-based consensus, breast reconstructive services can be provided according to the local healthcare system restrictions with the strategic application of recommendations to reduce resource demands.

Meaning: During periods of resource restrictions, breast reconstruction is a valuable patient-centered service which can be provided with tailored strategies to optimize resource utilization for triage and treatment.

available due to restricted surgical access, it is an irreversible missed opportunity for better health outcomes.^{10–15} Patients are irrevocably committed to either no reconstruction or to long wait-times for consideration of breast reconstruction in a delayed fashion.¹⁶ Contrary to other elective surgeries,¹⁷ IBR is not equivalent to the alternative option of delayed reconstruction since it has irreversible consequences for long-term outcomes and inadvertently increases the need for future health care services. Thus, IBR is best classified as a medically necessary, time sensitive (MNTS) procedure as opposed to an “elective” procedure because “elective” is often conflated with “optional.”¹⁸ When reconstruction is delayed, patients must cope with the negative psychological impacts and are faced with a greater likelihood of a multistaged or more complex surgery.^{15,19} Reconstruction types include implant-based and tissue-based options, with the latter being more complex and necessitating proportionately greater healthcare resources.²⁰ With omission of IBR during the pandemic, a patient’s options for reconstruction in a delayed fashion differ from those available at the time of mastectomy, bolstering the classification of IBR as MNTS.

Before the COVID-19 pandemic, Canadian women faced long delays to access breast reconstructive services. Across Canada, pre-existing challenges are ubiquitous for access and coordination, significantly hindering the delivery of reconstructive services.^{21,22} During the pandemic, as recently as Spring 2021, breast reconstruction services were reduced up to 90% across Canadian institutions, with an average of 50% reduction since its onset in March 2020.³ Breast reconstruction was restricted and not performed following mastectomy, as it is considered an “elective” component of surgical care. This pan-Canadian halt in reconstructive services has created a novel cohort of patients, deemed the “COVID-delayed,” and refers to women disadvantaged by pandemic restrictions with irreversibly compromised or delayed reconstruction. This cohort is distinct from women currently experiencing multiyear waitlists pre-COVID due to inadequate healthcare resources.¹⁶

Furthermore, there is a rise in surgical demand for breast cancer patients in whom ablation was delayed with endocrine or chemotherapy treatment. This influx of patients requiring surgical access is compounded by

the surge of new cancer diagnoses with the reopening of screening breast imaging programs. This directly increases the number of patients eligible for and desiring IBR. In reopening and ramping-up phases of the pandemic, these patient populations merit prioritization given the anticipated worsening of existing delays for reconstructive services.

How is Breast Reconstruction Regarded in the Global Context during the COVID-19 Pandemic?

In March 2020, guidelines for breast cancer triage were published by the COVID-19 Pandemic Breast Cancer Consortium in the United States.²³ Surgical access was recommended to be restricted to patients who were likely to have survivorship compromised if surgery was not performed within three months, with breast conserving surgery encouraged and, when possible, to defer definitive mastectomy with or without reconstruction until after the COVID-19 pandemic. Only the most resource-intensive tissue-based reconstruction was specifically recommended for deferral, inferring that implant-based surgery could still proceed when mastectomy was imminently required. Similar recommendations were issued in the United Kingdom, advising that breast conservation was preferred, with allowance of implant-based IBR and deferral of tissue-based reconstruction.²⁴ In Italy, institutional limits on elective surgery still allowed oncologic procedures to be performed, as implant-based IBR remained as an integral component of comprehensive care throughout the pandemic. These recommendations were also echoed by a global expert consensus.²⁵ During the acuity of the COVID-19 pandemic, IBR was not denied, as this would generate an undesired backlog of patients requiring delayed-breast reconstruction with additional costs, psychosocial distress, and substandard care.²⁶

Early resumption of the complex tissue-based reconstruction was first re-initiated in the United Kingdom in June 2020,²⁷ based on the NHS improvement program GIRFT (Getting It Right First Time). Multidisciplinary discussion with strict patient selection, augmented surgical and nursing teams, and optimized perioperative care permitted the successful resumption of tissue-based IBR. With monthly updates throughout the pandemic, the United Kingdom has been transparent and proactive with resuming the full spectrum of breast reconstructive services, outlined in the Clinical Guide to Surgical Prioritization during the Coronavirus Pandemic.²⁸ In the most recent update, IBR is recommended, when indicated by specific criteria, with either implant-based or tissue-based IBR in less than one or three months based on disease severity. In the global context, healthcare systems have adapted to uphold women's choice for IBR as part of comprehensive cancer care. With the cumulative increased demand for reconstructive services in Canada, strategies for reopening and ramping-up are required to prioritize equitable access to care. Principles of ramping-up in the healthcare system include developing algorithms to maximize patient benefit and minimize COVID-19 exposure, expand surgical capacity into outpatient facilities, increase surgical flexibility with work outside of regular hours, maximize

operative efficiency with dedicated specialized teams, and streamline perioperative care.²⁹

How Can We Change Models of Care to Facilitate Breast Reconstruction during Periods of Resource Restrictions?

As surgical access fluctuates with acute COVID-19 demands on hospital capacity, we provide recommendations to strategically optimize use and reduce the burden of resources. These strategies guide the recommencement of IBR, based on an ethical framework for ramping-up healthcare services,²⁹ from the current practice (of potentially no reconstruction) to our standard of practice (offering all options of BR).

In all phases of capacity restriction, strategies for centralization of patient triage, selection, and patient-centered delivery of care can enhance capacity for IBR. Patient triage and selection by a multidisciplinary team (MT) optimizes an institution's utilization of resources, with centralized treatment decisions, and allocation of surgical care to align patient interests and institutional resource capacity. For women seeking IBR, surgical care is discussed by MT, with assessment of perioperative risks to determine suitability in the context of adjunctive treatments and to avoid complications based on guidelines and individualized risk calculators.^{30,31} MT discussion also facilitates patient-centered consolidation of resources with strategic changes in the model of care delivery. Resource utilization is reduced with a centralized clinic for patient assessment by ablative and reconstructive teams. Centralized scheduling of operative procedures maximizes use of allottable operative time by uncoupling the consulting and operating surgeon, with multiple surgeons forming operative teams. These changes in care delivery require standardized management strategies by treating surgeons as well as education and involvement of patients at the time of the initial consultation. Also, centralized regional pooling and allocation of resources across institutions allows for shifting IBR procedures to ambulatory facilities which are not involved in acute care.

How Can We Optimize Surgical Care to Offer Breast Reconstruction during Periods of Resource Restrictions?

Given severe restrictions to surgical access, maximized operative efficiency is required and achievable through alternative treatment plans. Alternative reconstructive plans offer a multistaged treatment that minimizes surgical complexity and risks, and offers the opportunity for a long-term outcome comparable to that expected in the absence of a pandemic. Alternative treatment plans minimize resources required with minimal operative time following cancer ablation and avoidance of inpatient stay. Alternative plans include optimizing use of oncoplastic reconstruction (OPR) and application of delayed-immediate reconstruction.

OPR enables surgeons to successfully expand patient candidacy for breast conservation.³² As compared to mastectomy and IBR, patients treated with OPR have fewer major complications, greater satisfaction, and require fewer hospital resources with shorter operative times and outpatient treatment.³³ In the absence of

contraindications, every attempt is made to conserve the breast, and OPR is offered with a discussion of adjuvant radiation implications in a multidisciplinary setting. If the patient does require adjuvant chemotherapy, OPR may be considered the first stage of surgical treatment. Approximately 4–6 months later, after OPR and completion of systemic therapy, patients may undergo a completion mastectomy and IBR to avoid the need for adjuvant radiation if deemed equivalent by MT and permitted by surgical access.

If mastectomy is imminently required, implant-based reconstruction is achieved by placement of either an implant or a temporary tissue expander at the time of ablation. There is a planned second surgery months later for exchange of temporary expander to implant or for conversion to tissue-based reconstruction. This method of “delayed-immediate reconstruction” affords a planned delay for patients seeking the most resource-intensive tissue-based reconstruction, with tissue expanders remaining safely in place until surgical access enables the second stage. Similar to OPR, the placement of a temporary prosthesis is an outpatient procedure and adds minimal operative time.

Perioperative resource demand is reduced with the standardized and mandated institution of Enhanced Recovery After Surgery (ERAS) protocols, which are evidence-based best practices bundled together to transform pre, intra, and postoperative care resulting in better patient outcomes and decreased healthcare costs. Canadians are leaders in ERAS, having developed guidelines in breast reconstruction,³⁴ secondarily sanctioned by the international ERAS Society for implementation globally. Using the tenets of ERAS, implant-based IBR has moved to outpatient care. ERAS protocols applied to tissue-based reconstruction similarly improve efficacy and patient safety.³⁵ Supporting this transition of recovery to home, virtual care has become ubiquitous, with smartphone follow-up omitting in-person visits and telemedicine home support expected to complement ERAS.³⁴ By applying the combined principles outlined for ramping-up, including changes in models of care, optimized surgical care, and perioperative management, tissue-based reconstruction would logically follow in accordance with hospital capacity.

Based on local resource restrictions, some or all of the above recommendations may be applied to enable the provision of breast reconstruction as a standard component of breast cancer care. An algorithm for these recommendations is presented elsewhere³⁶ and may provide an institutional framework for applying alternative reconstructive options.

CONCLUSION

With gradual reopening of hospital capacity, healthcare facilities will face additional pressures to restore all delayed surgical services, tackle expanded waitlists, and maintain surgical access for active breast cancer patients. From this analysis, we have devised and outlined a unified approach to strategically reorganize healthcare delivery

to uphold standards of patient-centered care for patients interested in breast reconstruction. Discussion between hospital administrators and MT will enable strategic decision-making based on the local environment, accounting for the fluctuating incidence of community cases, admissions to hospital, acuity of hospital care, availability of health care workers, and program budgets. We propose these strategies will permit optimized patient-centered care in this current environment of fluctuating and prolonged strains on the healthcare system and may be adapted according to local context.

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