



REDUCING SURGICAL WAITLIST TIMES IN AUSTRALIA



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Abbreviations

CPT – Clinical Prioritisation Tool

ERAS – Enhanced Recovery After Surgery

GP – General Practitioner

ICU – Intensive Care Unit

IoL – Impact on Life

LBP – Lower Back Pain

MBS – Medical Benefits Scheme

NICE – National Institute for Health and Care Excellence

OECD – Organisation for Economic Co-Operation and Development

PROM – Patient-Reported Outcome Measure

RACGP – Royal Australian College of General Practitioners

RACP – Royal Australasian College of Physicians

RACS – Royal Australasian College of Surgeons

TKR – Total Knee Replacements

WHO – World Health Organization

EXECUTIVE SUMMARY

OVERVIEW

This document provides key information on managing elective surgery waitlists, which have grown as a result of restrictions on operating theatre use due to the COVID-19 pandemic. Waitlists for low acuity surgery (Clinical Priority Categories 2: semi-urgent, and 3: non-urgent)¹ are likely to grow longer over the next 6–12 months, as patients (and their surgeons) defer non-urgent surgery until the risk of infection associated with COVID-19 reduces.

To better understand this situation, we conducted a rapid evidence check of the relevant literature, including peer-reviewed publications and grey literature, such as websites of the World Health Organization (WHO), NSW Health, and the Organisation for Economic Co-Operation and Development (OECD), in order to provide an overview for addressing surgical waitlist times post COVID-19. We applied our expertise in systems science, complexity science, and resilient healthcare to develop a synthesis overview of the best evidence we could find for managing the surgical backlog.

All Australian states have existing strategies and policies for managing waitlists and resuming safe surgery post COVID-19. In this document, we do not duplicate those state, territory, and federal body recommendations for the safe, staged return to elective surgery. Instead, our review focuses on longer-term strategies to address waitlist times and to capitalise on opportunities for transformation presented by COVID-19.

Through our examination of the literature, we identified three priority areas in which improvements are most likely to yield significant outcomes for the Australian healthcare system: 1) *Streamlining processes and patient journeys to address the surgical waitlist backlog*; 2) *Improving waitlist management and prioritisation strategies*; and 3) *Reducing low-value, high-cost care*.

An additional point of note from the evidence check, which may have implications post-pandemic, was a reduction in healthcare-seeking behaviour during the pandemic. In the same way that flattening the curve during the COVID-19 pandemic gave us time to increase intensive care unit (ICU) capacity, this stage of the pandemic affords us with an opportunity to review and implement strategies to address and minimise the expected surge in demand when post-COVID-19 care resumes. It also gives us the opportunity to strengthen our systems capacity against future pandemics and challenges.

STREAMLINING PROCESSES AND PATIENT JOURNEYS TO ADDRESS THE SURGICAL WAITLIST BACKLOG

The current surgical downtime can be used to streamline organisations and processes to address the expanding waitlist for elective surgery once the pandemic subsides. Preparations for COVID-19, such as additional hospital beds² and an increase in virtual care³ that enhanced the capacity to care for more patients and reduce the length of stay in hospitals, could be useful in clearing the surgical backlog. For example, new virtual care models can enable patients to avoid hospital admission or recover at home post-surgery, thereby freeing up hospital resources for other patients.⁴ We have identified an evidence-based list of strategies for improving patient journeys and increasing efficiency. These strategies target patients, medical facilities, healthcare professionals, and healthcare organisational processes, and community engagement. Strategies include:

- Auditing the current waitlist to prioritise patients most in need, including re-assessing the need for, and effectiveness of, scheduled low-value, high-cost surgeries⁵⁻⁸
- Postponing surgeries for high-risk patients, where ethically feasible⁹

- Harnessing the capacity of the private sector through sub-contracting of surgeries⁸
- Increasing capacity through extra clinics, additional fractional appointments, and supporting higher clinician caseloads,¹⁰⁻¹⁵ and
- Streamlining organisations and processes, such as enhanced pre-operative patient care and post-operative innovations, aiming to reduce patient harm, length of stays, and costs.¹⁶⁻²⁰

IMPROVING WAITLIST MANAGEMENT AND PRIORITISATION STRATEGIES

Longer-term strategies have been identified in the literature for preventing growth in surgical waitlists, including pooled waitlists, advanced methods for prioritising patients, and seeking to implement alternative models of care.

Pooled waitlists address the wait time problem by creating a unified queue that directs each patient to the next available provider based on their acuity and priority on the list. In this model, waitlists would be considered at a centralised level (e.g., a group of hospitals, a local health district, or state-wide). This system would offer the patient the first available surgical appointment. If the patient declines the offer, he or she will remain on the list with their current priority. This streamlines the provision of surgeries by utilising more of the available resources and maintaining patient preferences for the location or provider of their surgery.^{8, 21} The pooled waitlist must be augmented through a team-based approach wherein surgical care is shared by a cooperative group of providers. This can address some of the existing workforce bottlenecks and increase system capacity, particularly if implemented across the public and private sector.²² However, there is mixed evidence regarding patient and provider acceptance of a team-based approach.^{23, 24} It is also mainly suitable for common and standardised procedures.²³

Another important area is the **prioritisation of patients, which should optimally give priority to patient needs**. Under the current Australian system, a specialist evaluates and assigns patients to one of the three categories (Clinical Priority Categories 1: Urgent, 2: semi-urgent, and 3: non-urgent). This is done by an individual doctor and without a formal process for patient input into the decision. Variation in surgical assessments between doctors can lead to inequity in the waitlist and the inclusion of patients on the waitlist who may be better served by alternatives to surgery.²⁵ The Royal Australasian College of Surgeons (RACS) has suggested that the current surgical categories are not sufficient to prioritise patients appropriately and have called for the categories to be redesigned to better capture patient need.²⁶ Surgical assessment and prioritisation could be improved by emphasising the use of the best-available evidence for patient referrals to promote more high-value care.²⁷ This requires the development of evidence-based criteria for setting priorities by specialists in each area.²⁵ As an example of how patient input has been incorporated into the clinical prioritisation process, we have included a case study from New Zealand in this report. The New Zealand Clinical Prioritisation Tool (CPT)²⁸ combines clinical, patient-centred, and social dimensions to identify the urgency of a patient's need for surgery before assigning surgical priority. If demonstrated to be effective, implementing a similar system in Australia would complement industry calls for reform.²⁶ Redesigning the process of prioritisation could reduce variation and inequity in surgical waitlists.²⁸

Alternative models of care can obviate the need for surgery, support patients in the home to avoid hospital admissions, and facilitate rehabilitation.⁸ Alternative models of care, including non-surgical interventions, virtual care (such as remote-monitoring and telemedicine) and hospital-in-the-home systems, allow patients to be cared for outside of a hospital setting.^{8, 29} We have learnt from COVID-19 about the rapid acquisition of new models of care, such as telehealth, digital monitoring, and teleconsultation, and should leverage this knowledge to develop suitable strategies for minimising the need for surgery, where appropriate.

We also identified several recommendations for systemic changes to support evidence-based surgical referrals. These include improving the referral pathway for patients by:

- Developing education programs for general practitioners (GPs) and patients to support appropriate referral and decision making²⁷
- Implementing decision-support tools to ensure compliance with surgical guidelines²⁷
- Establishing a triage referral system with allied health professionals¹⁴ and
- Improving diagnostic processes to speed diagnosis.¹⁰

REDUCING LOW-VALUE, HIGH-COST CARE

Although low-value surgeries, i.e. those that provide little or no tangible benefit to the patient, have been identified by numerous professional bodies, they continue to be performed across the nation.^{27, 30} For example, in NSW, unnecessary surgery is estimated to cost upward of AU\$49.9 million annually in the public sector. In the private sector, low-value care accounts for up to **AU\$211 million in hospital benefits** and nearly **AU\$62 million in medical benefits annually across Australia**. These estimates are likely to be conservative.³⁰ To reduce low-value surgery, the system needs to become more transparent and have increased accountability. Monitoring known low-value procedures across public and private settings using established guidelines could be a step towards minimising waste and variation. This could be accomplished by developing central monitoring systems that mobilise multidisciplinary teams to provide second opinions and encouraging adherence to guidelines. This can help control unnecessary variations in practices whilst increasing provider accountability.^{8, 31, 32}

Incentives to promote the provision of more appropriate, high-value care have also been suggested. Since a significant number of low-value surgeries are conducted in the private sector,^{33, 34} and private insurers are required to cover hospital episodes with Medicare Benefits Schedule (MBS) item numbers, an additional option to support a reduction in these surgeries might be to consider limiting the volume of low-value surgery of each MBS item.³⁵

FUTURE SURGICAL DEMAND INCREASE DUE TO DEFERRED ROUTINE CARE AND SCREENING

Whilst the pause in non-urgent surgeries is an opportunity to reset the system to offer more high-value care, a new problem may be looming on the horizon once we emerge from the pandemic. There has been a significant reduction in in-person GP appointments,³⁶ emergency department presentations³⁷ and cancer screening and diagnosis nationally.^{38, 39} Neglecting cancer screening, routine and emergency care, can worsen chronic conditions and delay early cancer diagnosis and treatment, which could affect overall survival, quality of life, and ultimately increase costs.³⁹⁻⁴¹ Although our review focused on improving waitlist management, we recognise the importance of routine care, outpatient screening services and consequential early intervention and surgical avoidance. Before returning to the 'new normal' in healthcare, whatever that may look like, emphasis and priority must be placed on prevention and screening services to ensure we are not feeling the fallout from COVID-19 in years to come because of worsening chronic conditions and the delayed discovery of more advanced cancers.

CONCLUSION

The COVID-19 pandemic offers an unprecedented opportunity to address multiple long-standing challenges presented in managing surgical waitlists. Based on our rapid scan of the literature, we have synthesised evidence that can address these concerns across the healthcare system from patient demand to system-wide efficiency, which could reduce the current waitlist backlog and prevent future increases in the waitlist. Below is a summary of evidence-based strategies to immediately reduce waitlist length, temporarily increase capacity, and to reset for high-value care (Figure 1).

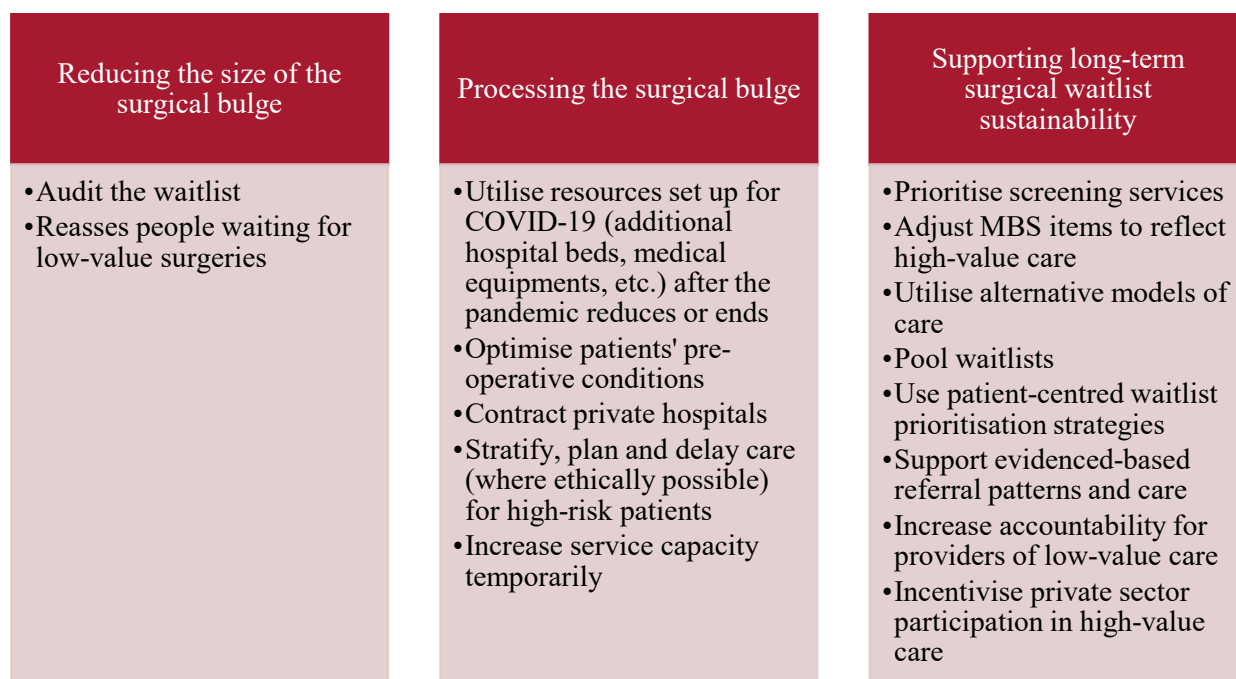


FIGURE 1: STRATEGIES TO PROCESS THE SURGICAL BULGE AND TO RESET FOR HIGH-VALUE CARE

REDUCING SURGICAL WAITLIST TIMES IN AUSTRALIA

BACKGROUND

The COVID-19 pandemic has constrained the health system's capacity to handle normal patient loads and has reduced the numbers of patients coming to hospitals for various reasons, creating considerable unmet or latent demand. Much of this is surgical care.⁴² Various names have been given to this phenomenon, including 'expanded waitlists', 'the surgical bulge', and 'the surgical backlog'.

Regardless of whether the pandemic is resolved quickly or not, additional care will need to be provided to the patients who have not been treated. We conducted a rapid scan of the literature to determine current best practices for managing elective surgery waitlists. This document provides a brief overview of strategies for dealing with this challenge.

The scale of the problem

Recent estimates indicate that between February and May 2020 in Australia, over **400,000 elective surgeries were delayed** due to the nation-wide cessation of surgeries.^{43, 44} This suggests that a 'surgical bulge' or backlog of cases is imminent, and will need attention following the pandemic.⁴³ Even before COVID-19, the Australian health system was facing the considerable challenges of an increasingly ageing population, a rising prevalence of chronic diseases and the growing cost of implementing new technologies.^{45, 46} In 2019, more than 760,000 elective procedures were carried out in the Australian health system, and more than **890,000 people were added to surgical waitlists**.⁴⁷ Recent data from the Australian Institute of Health and Welfare revealed that the number of elective procedures across Australia has been growing at an average of 2.1% per year since 2014. As a result, patients are waiting longer to receive their care with Indigenous Australians disproportionately experiencing delays.⁴⁸

Current elective surgery waitlist management

Prior to COVID-19, waitlists, in combination with other priority mechanisms, were used in Australia, and around the world, as a way of rationing finite surgical resources. In Australia, surgical waitlist guidelines and urgency categorisations (Category 1: urgent, Category 2: semi-urgent, and Category 3: non-urgent) are defined at the federal level,^{1, 49} and tailored and implemented by the states and territories, with relative uniformity.^{50, 51} The initial elective surgery pause in response to COVID-19, and the gradual resumption has followed a similar pattern; that is federal recommendation^{52, 53} and state-based policy design and implementation.^{54, 55} In practice, this means that state and territories have resumed elective surgery at different rates, depending on the severity of the outbreak in their region. For example, at the time of writing this report, Victoria has suspended all Category 3 surgeries and lower-priority Category 2,⁵⁴ whereas Queensland has resumed Category 3 surgery and increased funding and surgical capacity to meet previously established target wait times for non-urgent surgery.⁵⁶ Each state and territory has also developed its own policy directives about the safe resumption of surgery in order to optimise resources, staff and patient safety. The state-based safe resumption recommendations are similar between states and territories and focus on extending theatre hours, pooling waitlists, screening of patients, and separating COVID-19-positive and non-positive cases.^{55, 57}

Here, we focus beyond safe, limited surgical resumption to identify strategies to address current and historical challenges to elective surgery waitlists. We summarise key strategies to improve waitlist management and streamline patient journeys. It seems evident that COVID-19 presents an opportunity for rethinking Australia's approach to the planning and delivery of elective surgical care and to reset the system for better value, more timely and equitable care.

METHODS

To examine this issue, we established two teams. Sponsored by Professor Jeffrey Braithwaite, an initial group of experienced health services researchers (Dr K-lynn Smith, Ms Isabelle Meulenbroeks, Dr Zeyad Mahmoud, Dr Janet C. Long, Dr Mitchell Sarkies, Dr Louise A. Ellis, Dr Kate Gibbons, Ms Chiara Pomare, Ms Hoa Mi Nguyen, Ms Chrissy Clay, and Associate Professor Yvonne Zurynski) conducted four literature reviews, focused on the following areas: eliminating the backlog of patients; successful waitlist management and prioritisation strategies; and strategies to reduce low-value care in the peer-reviewed and grey literature. The search methods are summarised in Appendix 1. The team compiled a draft report of their findings. A second group — an experienced health services researcher and a senior clinician (Dr Robyn Clay-Williams and Professor Clifford Hughes) — were invited to review the report for feasibility and made additional comments.

RESULTS

In this report, we include a set of strategies to address the current waiting times and to ensure that waitlists do not continue to grow once the pandemic is under control. Based on our examination of the literature and expertise in the field of health system sustainability, we identified three areas of priority in which improvements are most likely to yield significant outcomes. These are: 1) *Streamlining processes and patient journeys to address the surgical waitlist backlog*; 2) *Improving waitlist management and prioritisation strategies*; and 3) *Reducing low-value, high-cost care*. We present each of these areas in a succinct summary with more details presented in the appendices. An additional point of note from the search that has implications for future surgical waitlists was a reduction in healthcare-seeking behaviour during the pandemic, which will inevitably lead to greater demand in the future.

1. STREAMLINING PROCESSES AND PATIENT JOURNEYS TO ADDRESS THE SURGICAL WAITLIST BACKLOG

Recovery from the surgery backlog will be difficult as the system is typically in equipoise, and not geared for a spike or surge in cases, and an ethically grounded surgery recovery plan will thus be required. We have identified a list of best practices relating to **hospitals, patients, healthcare professionals, and medical facilities to streamline organisations and processes**. This can provide relatively rapid improvements to system flow leading to increased capacity and reduced bottlenecks.

To prioritise the expanded waitlist, an audit of the patients' needs and duration on the waitlist should be undertaken. Patients for whom a thorough case review suggests surgery can be delayed or avoided without resulting in significant harm or poor outcomes, such as some elective total joint replacements for osteoarthritis, spinal fusion, chronic joint conditions, could potentially be rescheduled or reconsidered. Patients scheduled for low-value, high-cost surgery (as identified by peak bodies, such as Choosing Wisely Australia and the Royal Australasian College of Physicians (RACP)) should be re-evaluated and directed to alternative models of care, where feasible.^{15, 27, 31, 58}

Assessing and optimising a patient's condition prior to surgery and implementing methods to facilitate early discharge can reduce the burden on the system. Early screening of patients for risk factors can contribute to greater efficiency by reducing patient harm, length of stay, and costs.^{59, 60} Similarly, the identification and implementation of pre-emptive measures to provide targeted care to high-risk patients could prevent discharge delays, complications, and improve patient flow.¹⁶⁻¹⁸ Reducing the length of stay in hospital through post-surgery innovations, such as enhanced recovery after surgery (ERAS), early mobilisation, and early supported discharge,^{61, 62} and using telehealth to a greater extent than previously in order to relieve outpatient services,¹⁹ are some additional examples of the measures we identified as effective ways to sustainably manage waitlists and the rising demand for surgical procedures (Table 1).

Suggestions for streamlining system processes include contracting private hospitals to perform elective surgeries for public patients,³² temporarily increasing workforce capacity through fractional appointments, and reconfiguring surgical teams.^{15, 22, 63, 64} More information can be found in Appendix 2.

TABLE 1. STRATEGIES FOR REDUCING THE CURRENT WAITLIST AND OPTIMISING SYSTEM FLOW

Domain	Recommendation	Outcomes sought
System Processes	Audit and contact people on the waitlist. Allocate to discharge, file review by a specialist or for appointment/surgery.	Reduce or eliminate current waitlist, optimise system flow
	Target low-value, high-cost surgeries for reassessment and treatment using alternative models of care.	
	Contract private hospitals to perform elective procedures at the public hospital efficient price.	
	Plan ICU admissions across hospitals, increase operating hours in theatre, and reduce pressure on outpatient services through telehealth support.	
Hospitals	Utilise post-surgery innovations, such as ERAS, early mobilisation, and early supported discharge, to free up resources.	Reduce or eliminate current waitlist, minimise bottlenecks
Patients	Increase throughput of cases by postponing surgery for high-risk patients (e.g., those with co-morbidities or overweight) and those whose conditions will remain stable during the waiting period.	More efficient management of waitlist
	Optimise all patients' pre-operative condition.	
	Enhance care to minimise risk.	
Healthcare workforce	Temporarily increase capacity through extra clinics.	More efficient management of waitlist
	Increase clinicians' caseload for a defined short period.	
	Augment workforce through fractional appointments, reconfigure care teams, and provide flexible work arrangements in hospitals for perioperative nurses, anaesthetists, and surgeons.	
Sources:	5-15, 27, 32, 65, 66	

2. IMPROVING WAITLIST MANAGEMENT AND PRIORITISATION STRATEGIES

Whilst supply-side strategies, such as increasing funding and staff capacity, may lead to short-term relief, evidence suggests that hybrid supply-demand interventions are most likely to generate sustainable outcomes.²⁵ In the long term, more radical interventions are required to redesign waitlists at the system, hospital and clinical levels. The literature points to a growing need to align activity with organisational priorities and demand modelling. Multiple countries around the world (e.g., Canada, Australia, and the UK) are now shifting to a **pooled waitlist** approach to the delivery of surgical care.^{23, 31} Pooled waitlist models address the wait time problem by drawing on more of the system resources directing patients to providers with available capacity based on specific criteria (acuity,¹⁰ time waiting, patient readiness, etc). In such models, waitlists would be centrally coordinated, which could be at the level of a group of hospitals, a local health district, or state-wide. This system would offer the patient the first available surgical appointment,

regardless of the patient's location. If patients decline an offer, they will remain on the list with their current priority. This approach can help to streamline the provision of surgeries by utilising available resources and maintaining patient preferences for the location of their surgery. Care would need to be taken to avoid excessive bureaucratisation of the system, and that coordination, not centralised control, is the goal. The list would ideally include both public and private patients to ensure equity of access to public hospitals, which would help address concerns that public patients wait longer than private because private patients can be treated in public hospitals.⁶⁷ The Australian government's partnership with private hospitals during the pandemic demonstrates how the two systems could work more closely together. In this agreement, private and public hospitals work together to care for and isolate COVID-19 patients, to expand ICU capacity, and to perform Category 1 surgeries.⁶⁸ After the pandemic, cross-sector agreements could be used to pool elective surgery waitlists, in turn optimising capacity, reducing inequity, and variation in waitlist processing.^{8, 21} One key challenge is payment mechanisms for private and public care, which would need to be worked through.

Team-based care, wherein a group of surgeons agrees to create a pooled waitlist for a speciality (e.g. cataract surgery) has also been proposed. Team-based care may be suitable largely for common and standardised procedures, where every surgeon on the team can provide equal care.^{22, 64} To implement a team-based approach, provider buy-in would be needed. One way to achieve this might be through developing an ethic among surgeons to view the total pool of patients as 'our patients', and to consider decision-making in terms of benefits to the community, rather than thinking of each patient as 'my patient' and counting benefits in terms of the individual only.⁶⁹

Another important area is the **prioritisation of patients**. Under the current Australian system, a specialist evaluates and assigns patients to one of the three categories. This is done by an individual doctor and without a formal process for patient input into the decision. Variation in surgical assessments can lead to inequity in the waitlist and the inclusion of patients on the waitlist who may be better served by alternatives to surgery.²⁵ The RACS has suggested that the current surgical categories (Category 1, 2 and 3) are not comprehensive enough to prioritise patients appropriately. RACS has recommended updating surgical categories to ration surgical resources and to address patient needs and risks.²⁶ Surgical assessment and prioritisation could be improved by emphasising the use of the best-available evidence for patient referrals to promote more high-value care.²⁷ Achieving this requires the development of evidence-based criteria for setting priorities by specialists in each area.⁶ This should be accompanied by the development of a triage referral system with allied health professionals,¹⁴ and education programs and decisions support tools for health professionals to support compliance with the criteria for surgical categorisation of patients.²⁷ Shared decision-making between health professionals and patients should be encouraged to support referrals to the appropriate care, particularly alternative models of care when recommended by the guidelines.^{8, 31} Restructuring the waitlist categories and improving health professional and patient education could encourage value-based care and streamline surgical resources post COVID-19.²⁶

To enable **patient input into the prioritisation process**, New Zealand is using a national, point-based system designed to deliver value-based and patient-centred surgical care. The New Zealand Clinical Prioritisation Tool (CPT)^{28, 70} incorporates clinical, patient-centred, and social dimensions to identify the urgency of a patient's need for surgery. This program included an Impact on Life (IoL) Questionnaire,⁷¹ which is a patient-reported outcome measure (PROM), designed to capture the needs, abilities and benefits of surgical procedures from the patient's perspective. It is intended to assist with the waitlist decision-making for non-high acuity surgery and uses a variable weighting system to balance patient numbers across clinical specialities. The intention is to ensure clarity, timeliness, and fairness in the waitlist system. This project provides some useful insights into how prioritisation of patients can be achieved within surgical specialities. (For further details, see the case study in Appendix 3B.)

Alternative models of care that can obviate the need for surgery, support patients in the home to avoid hospital admissions, and facilitate rehabilitation should also be supported.⁸ Examples of alternative models

of care include early supported discharge and hospital in the home, co-location and coordination of primary or specialist care for older adults in aged care facilities, and intravenous anti-cancer therapy at home²⁹ as well as virtual care. Virtual care is generally considered healthcare provided outside of a traditional clinical setting (e.g. hospital, GP office) using technology.⁷² Telehealth is a type of virtual care. In response to the pandemic, there has been a rapid uptake of virtual care models, boosted by new funding for telehealth through new MBS item numbers⁷³ and programs, such as the NSW Virtual Care Accelerator. An example of a virtual care model in NSW is *RPA Virtual*, which launched in February 2020.⁷⁴ This program has managed over 2000 patients as of July 2020, predominately COVID-19 positive and negative patients in hotel quarantine. The program, designed as a pilot prior to the pandemic, was originally intended to reduce hospital and emergency department admissions and to monitor medication administration for specific cohorts of patients.³

The use of alternative models of care, including telehealth and telemonitoring of patients, can reduce the waitlist by treating patients in alternative ways, and can thereby free up hospital resources.⁴ Private health insurers could be incentivised to participate in alternative models of care to increase the scale of these programs.⁸ Appendix 3A provides a high-level overview of the predominant waitlist management and prioritisation strategies we identified in our search.

3. REDUCING LOW-VALUE, HIGH-COST CARE

In total, it is estimated that low-value surgery costs the private health sector up to AU\$211 million in hospital benefits and up to AU\$62 million of annual medical benefits.⁵⁴ In NSW alone, surgery that provides no- or low-value to patients is estimated to cost between AU\$49.9 and AU\$99.3 million in NSW public facilities and accounts for 14,348 to 29,705 bed days per year. These are likely to be conservative estimates.³⁰ The forced pause in elective surgery due to COVID-19 infections is a unique opportunity to plan and reset the system to provide more high-value care, increased equity, and improved sustainability.⁵⁸ To accomplish this, there needs to be more **transparency, accountability, and new incentives** across the system to monitor and control variations in care and limit the delivery of low-value procedures. Central monitoring systems that mobilise multidisciplinary teams to provide second opinions and encourage adherence to guidelines can help control unnecessary variations in practices whilst increasing provider accountability.^{8,31} Efforts to reduce low-value care need buy-in from both the public and private sector, as the private sector is also a significant producer of low-value care in Australia.⁷⁵⁻⁸⁹ Multiple professional organisations, including RACP Evolve Program, Royal Australian College of General Practitioners (RACGP), National Institute for Health and Care Excellence (NICE) and Choosing Wisely programs in Australia, New Zealand, Canada and the UK, have developed guidance about specific circumstances wherein surgery provides little or no benefit to the patient. Examples of low-value procedures have been identified and relevant ‘do-not-do’ guidelines developed for spinal surgery, knee arthroscopy, total hip and knee replacements, hysterectomy, colonoscopy, endoscopy, carotid endarterectomy, abdominal aortic aneurysm repair, and hernia repair.⁷⁵⁻⁸⁹ This information should be used to guide the development of efforts to minimise waste (Appendix 4).

4. FUTURE SURGICAL DEMAND INCREASE DUE TO DEFERRED ROUTINE CARE AND SCREENING

An additional finding of note from the evidence check was a reduction in healthcare-seeking behaviour. Whilst the pause in non-urgent surgeries is an opportunity to reset the system to offer more high-value care, a new problem may be looming on the horizon once we emerge from the pandemic. There has been a significant reduction in in-person GP appointments,³⁶ emergency department presentations,³⁷ and cancer screening and diagnosis nationally.^{38,39} Neglecting routine and emergency care as well as cancer screening can worsen chronic conditions and delay early cancer diagnosis and treatment, which could adversely affect overall survival, quality of life, and ultimately increase costs.³⁹⁻⁴¹ Although the strategies identified from

the literature focus on improving surgical waitlist management after the COVID-19 pandemic has passed, we recognise the importance of routine care, outpatient screening services and consequential early intervention, and surgical avoidance. When returning to the ‘new normal’ in healthcare, emphasis and priority must be placed on prevention and screening services to ensure we are not feeling the fallout from COVID-19 in years to come.

CONCLUSION

The COVID-19 pandemic presents an opportunity for rethinking Australia’s approach to the planning and delivery of surgical care. Based on a rapid evidence check of the relevant literature including peer-reviewed publications and grey literature, we identified three areas of priority in which improvements are most likely to yield significant outcomes. These are: 1) *Streamlining processes and patient journeys to address the surgical waitlist backlog*; 2) *Improving waitlist management and prioritisation strategies*; and (3) *Reducing low-value, high-cost care*. We provided a set of strategies in each of these areas which could assist in delivering greater levels of value-based, patient-centred, and sustainable surgical care. We also recognise that the reduction in health-seeking behaviour during the pandemic may result in a delay in diagnosis for some conditions, particularly cancers, that may affect the surgery waitlist.

APPENDICES

APPENDIX 1. METHODS

SEARCH METHODS USED TO IDENTIFY RELEVANT LITERATURE

Peer-reviewed literature on addressing the current backlog of surgery, optimising health systems flow, and managing surgical waitlists was retrieved from databases (Medline OVID, Scopus, and Google Scholar), and through targeted hand-searches as well as snowballing techniques. Recommendations on low-value care were retrieved from the websites of leading professional bodies: Choosing Wisely (Australia, New Zealand, United Kingdom and Canada), the Royal Australian College of General Practitioners (RACGP), the Royal Australasian College of Surgeons (RACS), the Royal Australasian College of Physicians (RACP), and the National Institute for Health and Care Excellence (NICE). Additional hand-searches of grey literature, including targeted searches of the websites of the World Health Organisation (WHO), NSW Health, and the Organisation for Economic Co-Operation and Development (OECD), were conducted to enhance the breadth of review. Our evidence base was further strengthened by expert knowledge in the field based on previous and ongoing research projects of the [Australian Institute of Health Innovation](#) and the [NHMRC Partnership Centre for Health System Sustainability](#).

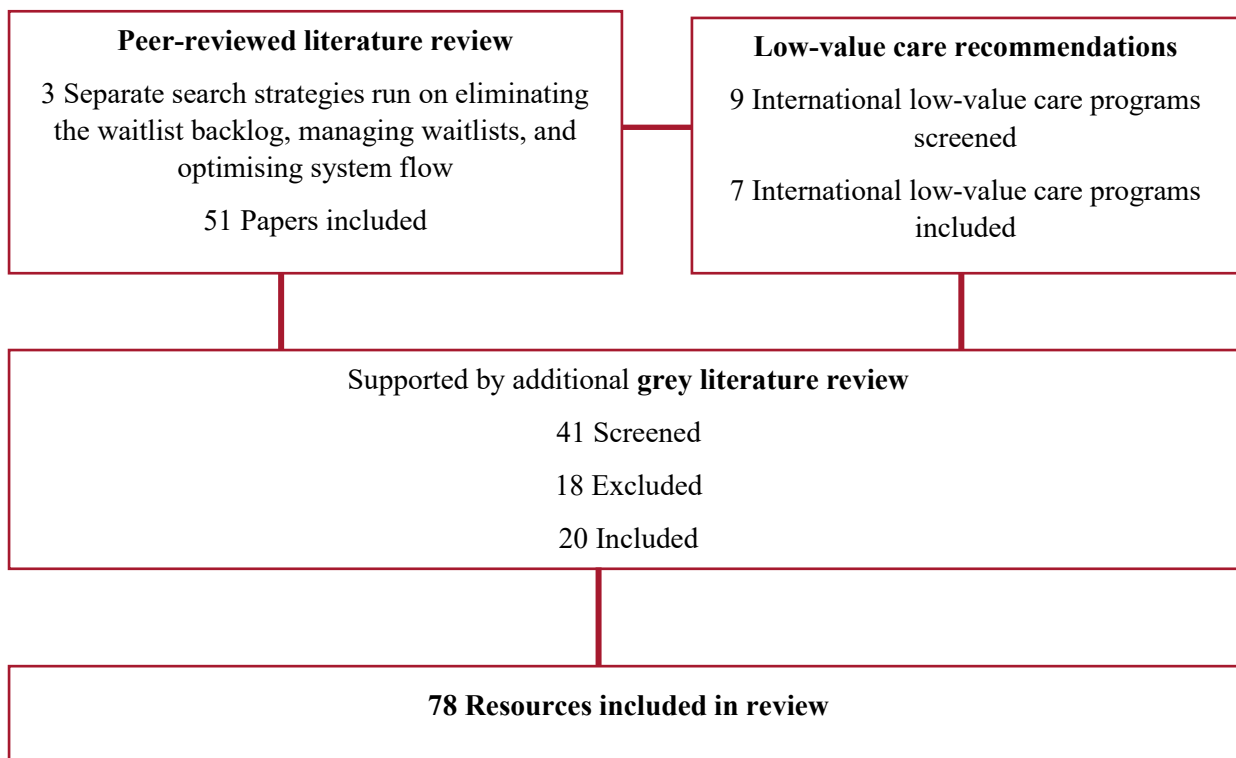


FIGURE 2: LITERATURE REVIEW FLOW CHART

APPENDIX 2. STREAMLINING PROCESSES AND PATIENT JOURNEYS TO ADDRESS THE SURGICAL WAITLIST BACKLOG

SUMMARY

Multiple suggestions have emerged from the literature to reduce the expanded surgical waitlist using system processes, hospitals, patients, and the healthcare workforce. Changes to system processes include auditing the waitlist to determine patient needs and priority using telephone contacts have been recommended. This would enable rapid triage of those on the list. Telephone contact is typically preferable to mail because patients can be assisted quickly (e.g., appointments can be booked, or questions answered).¹⁰ Text messaging and email are likely to be less efficient but can be used as a backup method of contact.⁹⁰ Patients who have improved without surgery can be referred to their GP for potential removal from the list. Patients scheduled for low-value, high-cost procedures can be re-assessed and potentially redirected to alternative models of care, such as physiotherapy for joint pain.⁷⁷

In the immediate term, efficiency can also be gained by streamlining patient journeys. Three methods of increasing system flow are commonly discussed: optimising patient pre-existing conditions, utilising post-surgery innovations to support patient recovery, and increasing system capacity to minimise bottlenecks (Table 1).

‘Idle’ time during COVID-19 could be used to optimise patients’ pre-existing conditions prior to surgery, reducing their risk of delayed discharge and post-operative complications. For example, achieving tight glycaemic control for people with diabetes pre-operatively reduces rates of surgical site infections, length of stay and other complications.¹⁶⁻¹⁸ Malnutrition,⁶⁰ smoking,⁹¹ alcohol use,²⁰ obstructive sleep apnoea, obesity⁵⁹ and delirium⁵⁹ are further examples of risk factors that could be screened, optimised or prioritised to enhance short- and long-term efficiency through reduced patient harm, length of stay, and cost.

In addition to optimising patients’ health prior to surgery, identifying, and pre-emptively providing targeted care to high-risk patients could prevent discharge delays and complications as well as improve patient flow. Patient screening traditionally considers comorbidities, functional status, and age. Socioeconomic status is an important, yet under considered, risk factor in poor surgical outcomes.⁹²⁻⁹⁶ Broader screening methods could be a way to appropriately plan hospital resources for this increased risk. Enhancing recovery after surgery in high-risk patients reduces costs, adverse events, and length of stay.^{61, 97-99} Post COVID-19, risk stratification and early intervention could be useful ways to enhance system efficiency for the immediate surgical bulge and the ‘new normal’.

Introducing post-surgery innovations, such as ERAS,⁶² early mobilisation and early-supported discharge, has been shown to be effective for many types of surgeries in reducing the length of stay in hospital.⁶¹ These practices could create more capacity within the hospital to accommodate new patients. Research suggests that, for certain low-risk procedures, early discharge makes no difference to patient mortality and may, following elective procedures, improve satisfaction.¹⁰⁰

Sticking points in the system that unnecessarily slow patient journeys and discharge from acute facilities can be addressed by expanding capacity in selected areas to help the system to flex and thereby meet the surgical bulge. This flex could be achieved by utilising operating rooms out of business hours,^{101, 102} specifically targeting factors that can reduce the post-operative length of stay in ICU,¹⁰³ and reducing pressure on outpatient services by following up selected surgical patients using telehealth.¹⁹

Regarding the healthcare workforce, the suggested interventions include temporarily increasing clinicians’ caseloads,¹²⁻¹⁴ augmenting the workforce through fractional appointments,¹⁰⁴ and reconfiguring healthcare teams to include specialist nurses or collaborative networks of doctors.¹⁵ For example, employing an orthopaedic nurse practitioner to optimise perioperative conditions for older patients undergoing hip replacement was found to reduce hospital length of stay and to provide a net cost savings to hospitals.⁶³

APPENDIX 3A. IMPROVING WAITLIST MANAGEMENT AND PRIORITISATION STRATEGIES

SUMMARY

Longer-term sustainable healthcare requires waitlist redesign at the system, hospital, and clinical level. In the past, supply side mechanisms, such as funding to increase hospital and staff capacity, have dominated strategies to managing wait times.²⁵ There has been less focus on improving productivity and system redesign. However, evidence suggests system and process improvements, such as aligning activity with organisational priorities and modelling demand, are more likely to provide sustainable improvements than funding for extra activity.^{25, 106} Evidence from studies reducing wait times to outpatient specialists services (e.g., urology consultations) indicates that an initial reduction or elimination of the existing backlog of waiting patients is required in combination with strategies to prevent the waitlist from returning to its previous length.¹⁰

A pooled waitlist model approach to surgery is one of the recommendations that has been used for specific conditions in some countries (e.g., Canada, Australia, and the UK).^{23, 31} Pooled waitlist models address the wait time problem by creating a single queue that directs each patient to the next available provider based on their acuity and priority in the queue. Team-based care is a further extension of care coordination whereby the surgical care of the patient is shared by a cooperative group of providers. In this model, an operation might not be performed by the first surgeon the patient meets, but by another member of the team who is equally skilled and familiar with the specifics of the patient's case. Ideally, pooled waitlists should operate across private and public sectors.¹⁰⁷ The Australian Government's partnership with private hospitals, driven by the pandemic, demonstrates how the two systems could work together. In this agreement private and public hospitals work together to care for isolated and COVID-19 patients, to expand ICU capacity, and to perform Category 1 surgeries.⁶⁸ Post-pandemic, cross-sector agreements could be used to pool elective surgery waitlists, in turn increasing capacity for waitlist processing.^{8, 21} One key challenge is payment mechanisms for private and public care, which would need to be worked through.

Team-based models can also be cost effective and have been reported as leading to improved patient outcomes.^{22, 64} However, team-based care may be suitable mostly for common and standardised procedures, where every surgeon on the team can provide equal care.²³ Additionally, shifting to a team-based care model is likely to require cultural change, to have clinicians change their focus from 'my patient' to 'our patient'. The surgical downtime could be used to reinforce the cultural shift and team-based care. This could be achieved through training and programs.¹⁰⁸

If well designed, pooled waitlist models satisfy key ethical principles for scarce allocation of resources, including greater levels of utility, fairness, and equity, and can be flexible enough to address concerns about patient autonomy.⁵⁸ Pooled waitlist models and team-based care can be effective strategies to reduce wait times, enhance the patient experience of care and improve surgeons' professional work environments.³¹ However, there have been mixed findings on patient acceptance of team-based care.^{23, 24} Acceptability may vary by type of surgery and type of condition.^{23, 24} To implement a pooled waitlist system, information systems must be modernised and integrated across hospitals and providers.³¹ Below is a summary of recommended models of waitlist management to optimise resources. These models are stratified by the actors able to implement them (Table 2).

TABLE 2. ONGOING APPROACH TO MAINTAIN OR PREVENT THE RE-FORMING OF WAITLIST QUEUES

Domain	Strategy	Outcomes sought
System	Create a single, centralised surgical waitlist for public hospitals — Offer the first available place/surgeon regardless of location with an option to wait for a closer location, include both public and private patients to ensure equity of access to public hospitals.	Promote increased patient choice and access, while ensuring one moving queue between metro and rural areas
	Modernise and integrate information management system across hospitals and providers.	
	Support and further develop alternative models of care (e.g., virtual care/hospital-in-the-home systems) to allow patients to recover at home or to avoid hospital admission.	Reduce the length of the waitlist by providing alternatives to surgery and ensuring the necessity of the procedure
	Empower private health insurers to participate in alternative models of care.	
Clinic	Increase provision of specialised day surgery centres for rapid processing of specific types of high-volume, high-value surgery (e.g., cataract).	Rapidly process cases by having facilities and workforce available
Sources:	8, 10, 31	

Another suggested prioritisation strategy is to emphasise referral pathways that support high-value care. This requires the development of evidence-based criteria for setting priorities by specialists in each area,²⁵ to be accompanied by the development of education programs and decision support tools for clinicians and patients. Clinicians should allocate more time to the initial appointment and assignment to the treatment pathway to reduce the frequency of follow-up appointments.¹⁰ Shared decision-making between clinicians and patients should be encouraged to support referrals to the most appropriate care, particularly alternative models of care when recommended by the guidelines.^{8, 31, 109} At the hospital level, increased efficiency in triage and diagnosis can provide more efficient resource allocation.¹⁰ Recommendations to support high-value appointments, wherein patients are assigned to the appropriate treatment pathway, and referral patterns are summarised below (Table 3).

TABLE 3. SYSTEM REDESIGN TO SUPPORT APPROPRIATE SURGICAL REFERRALS

Domain	Strategy	Outcomes sought
System	<p>Develop education programs for GPs and patients to support appropriate referral and decision making.</p> <p>Create and implement decision support tools to ensure compliance with surgical guidelines.</p>	Reduce inappropriate surgical referrals
Hospital	<p>Establish a triage system (nurse or allied health professional led) to determine appropriateness of referral and best pathway.</p> <p>Improve diagnostic processes to ensure a high chance of delivering a diagnosis in a single visit.</p> <p>Utilise pre-clinic tests to predict likely diagnosis based on referral information.</p>	<p>Direct patient to most appropriate type of care (surgical or non-surgical intervention). Avoid the re-forming of queues and sustaining benefits of initiatives to reduce the waitlist</p> <p>Reduce the frequency of low-value follow-up appointments, increasing capacity for newly referred patients</p>
Clinic	<p>Dedicate more time to new patient visits than to follow-up visits and review the new patient referrals daily.</p> <p>Telephone contact with all patients and appointments booked during the call, with a choice of day and time. Do not rely on mail, text message or email contact only.</p>	<p>Shift the focus from potentially low-value follow ups to initial appointments and allocation to treatment pathway</p> <p>Reduce nonattendances</p>
Sources:	10, 11, 13, 14, 27, 90	

APPENDIX 3B. CASE STUDY – A CASE STUDY OF NEW ZEALAND’S USE OF PATIENT REPORTED OUTCOMES IN SURGICAL WAITLIST PRIORITISATION

The New Zealand Ministry of Health is currently using a national surgical prioritisation program to address issues in timely and fair access to elective surgery.¹¹⁰ In the program, patients are prioritised using a Clinical Prioritisation Tool (CPT)^{28, 70} which considers clinical, patient-centred and social dimensions. The tool includes a locally developed questionnaire, the Impact on Life Questionnaire (IoL).⁷¹ The IoL is a patient reported outcomes measure (PROM) that considers personal safety, personal care, social interaction, personal interaction, leisure, and caring abilities. By including PROMs in the CPT, patients are provided with an opportunity to voice how they are impacted by their condition.¹¹⁰

The program uses the IoL questionnaire in most surgical waitlists across specialities, except for cardiology and neurology due to their acuity. The contribution of the IoL to the overall CPT score is weighted for each speciality, to account for differing clinical risks, such as condition deterioration and suboptimal patient outcomes. A benefit of the IoL is that it can be replicated following the procedure to measure the effects of surgery.

The IoL is administered by mail or email prior to the first specialist appointment, or as a backup on a tablet onsite at the time of appointment. Patients are encouraged to fill out the questionnaire without the clinician present to reduce bias. Ideally, the specialist should have the questionnaire results on hand at the time of making decisions regarding surgical prioritisation. This is enabled by a web-based prioritisation platform.

A potential barrier to the uptake of the questionnaire may be the perception by clinicians that it limits professional autonomy. New Zealand has attempted to address this by developing extensive patient health literacy programs to empower patients to ask their clinicians about the questionnaire, if it is not provided.¹¹⁰

To the best of our knowledge, there has been limited evaluation of the effect of the program on overall surgical wait times.²⁸ However, results have illustrated that patient perceptions of their medical condition do not always match clinician-rated severity.¹¹⁰ The use of PROMs in the CPT has the potential to address this discrepancy and reduce clinical variation by encouraging patient-centred and needs-oriented prioritisation. Further evaluation is required to confirm the impact PROMs have on equitable access in surgical waitlists.²⁸

APPENDIX 4. REDUCING LOW-VALUE, HIGH-COST CARE

SUMMARY

No- or low-value surgery is estimated to cost between AU\$49.9 and AU\$99.3 million in NSW public facilities alone and account for 14,348 to 29,705 bed days per year.³⁰ Experts suggest that this is an underestimate.²⁷ The forced pause in elective surgery due to COVID-19 is a unique opportunity to plan and reset the system for high-value care and sustainability.^{27, 58} Mechanisms to seize this opportunity are summarised in Table 4. Applying these methods in the short term, could reduce the size of the looming surgical bulge and in the longer-term support system sustainability.

TABLE 4. REDUCING THE CONTRIBUTION OF LOW-VALUE SURGERY TO WAITLISTS

Domain	Recommendation	Outcomes sought
Transparency	Routinely track known low-value procedures across the public and private sector.	Monitor care variation
Accountability	Hold providers and institutions accountable for low-value care.	Control care variation
Incentives	Increase the levers private health funds have to discourage low-value care.	Enable private insurers to limit low-value care
Sources:	7, 15, 27	

Low-value surgeries of various kinds have already been identified by professional bodies; however, they continue to be performed nationally.¹¹¹ Monitoring known low-value procedures across public and private settings, using established guidelines, could be the next step to minimising waste and variation. Low-value procedures have already been identified by the RACP Evolve program, the RACGP, NICE and Choosing Wisely Australia, New Zealand, Canada, and the United Kingdom. It is estimated that a fuller list of low-value procedures would be longer than the list put forward by these institutions.¹¹² Some potentially low-value procedures, such as total hip and knee replacements, represent a grey area in low-value care. They may in some circumstances be beneficial, but in general are over performed.¹¹³⁻¹¹⁵ For example, it is estimated that up to 30% of total knee replacements (TKR) are unnecessary.¹¹⁵ Tracking borderline low-value surgeries may require broader performance targets, than just the ‘do not’ guidelines put forward by leading organisations. For example, in the case of TKR, a useful benchmark could be the number of patients who trialled non-surgical interventions prior to referral to an orthopaedic surgeon.⁷⁷

The rate of low-value procedures performed varies significantly by location.^{111, 116} This variation is multifactorial; however, it is clear that in most health systems or locations a small number of surgeons perform a disproportionate percentage of low-value procedures.^{111, 117} Central monitoring, through multidisciplinary teams, second opinions and guidelines, could help address this phenomenon and reduce the amount of unnecessary variation.³¹

A significant number of low-value surgery cases are also conducted in the private sector.³³ In total, low-value surgery is estimated to cost AU\$112–211 million in hospital benefits and AU\$40–62 million in medical benefits annually, and represents 28.3% to 35.5% of total admissions in this sector.¹¹⁷ These estimates are likely to be conservative. Private funds have limited levers to address the issue as they must, by Australian law, cover hospital episodes where MBS claims are made. A recent report from the industry has called for known low-value surgical procedures to be removed from the MBS.¹¹⁷ An important caveat to this is the assumption that all potentially low-value surgeries are unnecessary. A more prudent approach

may be to restrict the claims refunded by the MBS and simultaneously incentivise surgeons to discontinue these procedures.³⁵ This could follow established ‘do not’ guidelines, which specify exemptions, and should be established with significant input from clinicians. Other literature suggests that cross-sector agreements, such as the Australian Government partnership with private hospitals, could be leveraged to discourage re-emergence of low-value procedures post the pandemic.²⁷

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