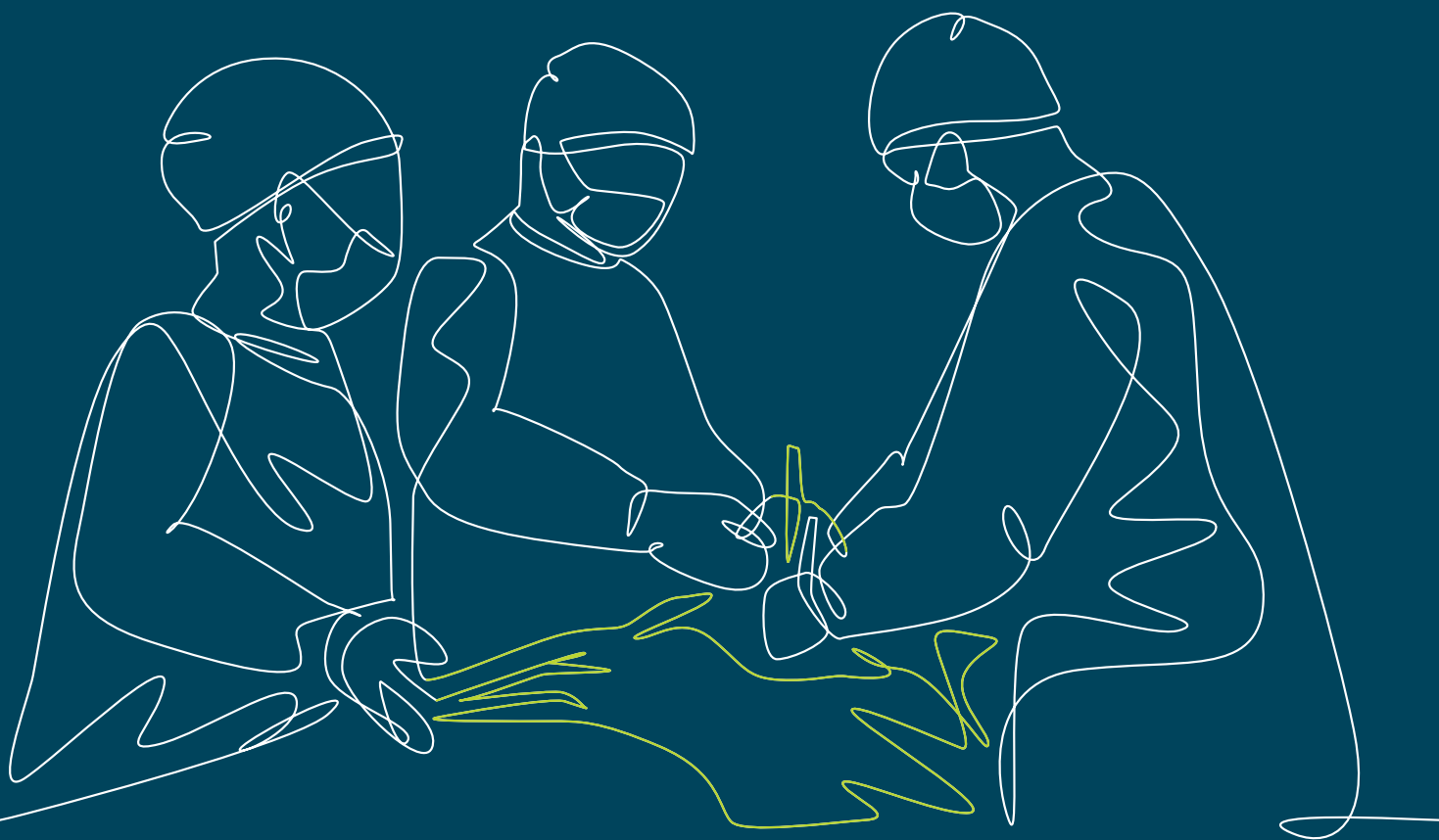


Value-based surgery

DECEMBER 2022



The information in this document should not replace a clinician's professional judgement.

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At a glance

Getting the most value from surgery involves patients having the right procedures, for the right reasons, at the right time.

This clinical practice guide aims to:

- enable more clinically appropriate procedures to be performed in public hospitals
- promote discussion between craft groups and NSW Health.

Step 1



- Local health district establishes Review Panel for Surgical Activity
- Review panel approves discretionary surgery

Step 2



- Proposed procedures added to list of Cosmetic and Discretionary Surgery

Step 3



- Recommendations for admission accompanied by clinical justification to be made to clinical director of surgery and Review Panel for Surgical Activity

Elective procedures identified as potentially low value

- Asymptomatic hernia repair
- Cholecystectomy – asymptomatic stone
- Colonoscopy
 - Cancer surveillance
 - Constipation
- Hysterectomy
- Knee arthroscopy (outside accepted criteria)
- Lumbar spinal fusion for back pain alone
- Myringotomy/grommets (outside accepted criteria)
- Tonsillectomy (outside accepted criteria)

Foreword: value-based healthcare

This document identifies procedures that, in certain patient cohorts or clinical presentations, offer little to no benefit to the patient. The procedures have been identified using current peer reviewed evidence and guidance and position statements from relevant craft groups. The identification was evidence-based. It also permits more clinically appropriate procedures to be performed in public hospitals.

This document is not intended to identify ‘never-do’ procedures. It is to start a conversation between the different craft groups and NSW Health where there is no agreement on the value of performing certain procedures on certain patient cohorts. This document should not be used to replace or interfere with clinical decision-making and the doctor/patient relationship.

In addition to the literature, there are guidelines that have been accepted by the craft groups as being appropriate and gold standard. To date, we have not operationalised these guidelines.

The value-based care initiative is not a cost reduction exercise. It is a method of matching and maximising the benefits of health resources to:

- evidence-based outcomes
- best practice
- personalised patient outcomes aligned with patients’ preferences.

An underpinning principle of healthcare is for patients to have the right procedures for the right reasons at the right time.

There are already examples of similar models. Multidisciplinary team conferences for cancer surgery have been established for more than 20 years. They provide a good model for the basis of this work. The shared decision-making model can also form part of this process.

Previously, cosmetic and discretionary procedures have been identified as low-value care and been addressed in the NSW Elective Surgery Access Policy.

This clinical practice guide identifies existing guidance from craft groups. The aim is to engage these groups in discussions about more procedures that could be added to the discretionary list. This list identifies procedures as having low value in terms of patient outcomes.

It is important to note that these procedures may still be of benefit to specific patient cohorts under certain circumstances. Additionally, careful consideration to clinical justifications, individual risks, benefits of the procedure, outcomes and experiences that matter to the patients should also be considered. This process should give transparency, consistency and governance to decisions.

Our aim is to determine a reasonable approach to sifting the vast amount of data using the principles of value-based care to generate a list:

- with clear clinical indications where the procedures are beneficial to patients
- based on already accepted guidance from relevant craft groups.

Professor Mohamed Khadra AO
Professor Neil Merrett

Methods and evidence base

The development of this document was informed by the 2020 Evidence Check for Resuming Elective Surgery – Low-value Care. For the Evidence Check, PubMed was searched on the 20 June 2020 using the follow search terms:

```
(overuse OR "low value"[Title/Abstract]) AND  
(surgery[Title/Abstract] OR procedure*[Title/  
Abstract]) AND ((review[Filter]) AND  
(2010:2020[pdat])) 223 results
```

```
("low-value"[Title/Abstract] OR "low value"[Title/  
Abstract] OR overuse[Title/Abstract]) AND  
((surgery[MeSH Subheading] OR surgical  
procedures, operative[MeSH Terms] OR general  
surgery[MeSH Terms] OR surgi*[Title/Abstract] OR  
surge*[Title/Abstract])) AND (2010:2020[pdat])  
{updating of September 2019 searches "low value"  
[Title/Abstract] AND review [ptype]) 165 results
```

An additional PubMed search on 18 March 2022 assisted in outlining surgeries that have been suggested to be of low value.

Guidance from Australian craft groups and other jurisdictions has been included to support inclusion of these procedures as well as existing indications. As the leader of published guidance in this area is Safer Care Victoria, we have based several findings on some of its recommendations. As a result, Safer Care Victoria has been referenced throughout this document.

The document has been developed by members of the Agency for Clinical Innovation's Surgical Services Taskforce (SST). Consultation was undertaken with NSW local health districts (LHDs) and specialty health networks, the SST, the Anaesthesia Perioperative Care Network and relevant craft groups.

Introduction

Rethinking surgery after the pandemic

Following the National Cabinet's response to the COVID-19 pandemic, NSW Health postponed non-urgent elective surgery. This led to an unprecedented backlog in the elective surgery waiting list. Out of this came an opportunity to rethink the way surgery is organised that furthered our efforts to shift from:

- volume to value
- outputs to outcomes.

This project aims to provide evidence-based guidance on value-based surgical care and recommendations for the next steps.

Providing evidence-based surgical interventions that are safe, timely, effective and cost efficient is the primary goal of surgical health care. As evidence emerges across the world, new surgical procedures are devised and older procedures are discontinued – or their indications are modified. As these new approaches to managing clinical conditions are found, they are spread across our health system. This ever-evolving practice helps to ensure that NSW surgical care is at the forefront of world practice and that the health resources are spent wisely and in the patient's interests.

This evolution is led by a cycle of research, publication, conference attendances, international/national evidence-based guidelines and peer practice. Best practice, evolved by this cycle, spreads slowly through the system. Policies will need to be regularly updated to reflect these changes.

What is value-based healthcare?

In NSW, value-based healthcare means continually striving to deliver care that improves:

- health outcomes that matter to patients
- the experience of receiving care
- experiences of providing care
- effectiveness and efficiency of care.

Value-based healthcare requires a collaborative approach to ensure best outcomes for patients and the best value for the system. Value-based care encompasses several aspects of surgical practice improvement aimed at maximising returns to the community, health resource spending and ensuring equity of care by minimising variations of treatments. Importantly, value-based care considerations impact on several facets of surgical care including:

- Choice of procedure enabled through shared decision making: patient preference is based on considerations, including patient-specific perioperative risk and expected benefit or outcome from the procedure, low-value procedures and alternatives to surgery.
- Preoperative maximisation of patient outcome: some examples are perioperative medicine and preadmission clinics, Enhanced Recovery After Surgery (ERAS) programs and high-risk patient programs.
- Postoperative care and discharge planning: this includes safety and quality, ward care, appropriate alignment of resources for post-operative care based on patient risk, multidisciplinary care pathways and the multidisciplinary team.

- Hospital to community transitions and virtual care: this involves minimising readmission, hospital in the home and virtual care initiatives.
- Avoiding variations of care and outcomes based on geography and socioeconomic status.

This clinical practice guide is focused on the choice of procedure, aligned with a patient's preferences and how to maximise value-based care surgical procedures in the NSW Health system. This clinical practice guide should not be used to replace or interfere with clinical decision-making and the doctor/patient relationship.

The proposal is to approach value-based care through the following process:

1. Establish a framework for a local review panel for surgical activity. This would be chaired by the director of surgery (or equivalent) or a delegate to evaluate and approve or reject identified potential low-value procedures.
2. After approval and discussion with craft groups, outline a list of value-based surgical procedures to be added to the existing list of cosmetic and discretionary procedures in the [Elective Surgery Access Policy](#).
3. Identify a communication and education strategy that encompasses the multidisciplinary team. This will need to be directed at surgeons and primary care physicians. Patients will also need to be educated about value-based care.
4. Establish a framework to monitor and report on value-based care in each district as part of the [surgical key performance indicators \(KPI\) dictionary](#). The Agency for Clinical Innovation is developing key indicators to support local implementation for hernia and cholecystectomy, with the view to including other procedures in the future.

Proposal for a review panel to approve discretionary surgery

The current Elective Surgery Access Policy refers to clinical directors of surgical services, or their equivalent, as the arbitrator of decisions about discretionary surgery. They do this in consultation with senior management at the facility and, if required, at the district level. To support appropriate, safe and effective decision making, it is suggested that each local health district (LHD) establishes a surgical committee that is chaired by the director of surgery, or equivalent. The committee would have access to a broad range of surgical specialists. The committee's purpose is to assist the director of surgery, or equivalent, to make clinical adjudications about recommendations for admission (RFAs). Those decisions would be made when they fall into the category of discretionary procedures listed in the Elective Surgery Access Policy.

It is proposed that, where possible, each LHD establish a Review Panel for Surgical Activity. The panel will provide support to the clinical director of surgery (or equivalent) and the executive. Within some LHDs, it may be more feasible for the review panel to be based in the hospital. It would assist in making strategic decisions about individual surgical procedures as proposed by an RFA form. The panel would also be the final arbitrator to determine whether an RFA is added to the waiting list. This process is outlined in [Figure 1](#).

The review panel could be comprised of:

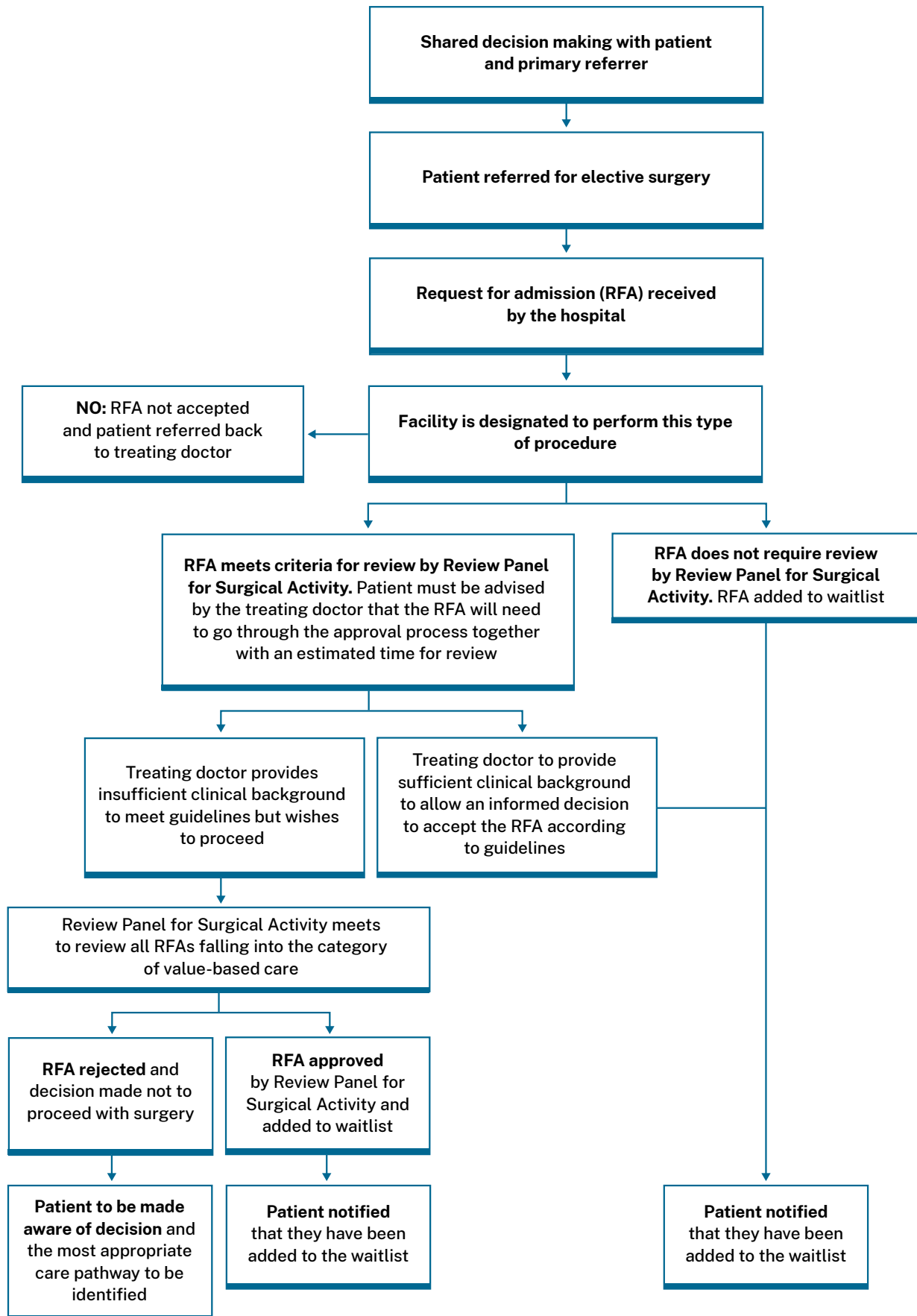
- clinical director of surgery, equivalent or delegate, as the chair
- three or four senior consultants drawn from orthopaedics, general surgery and two other specialties
- an operating theatre manager
- head of department of anaesthetics or delegate.

All RFAs falling into the category of value-based care that do not meet the accepted criteria (as listed below and proposed to be included in the Elective Surgery Access Policy) would be referred to this panel. The referral would be made through the clinical director of surgery, or equivalent, before the RFA was accepted. The surgeon proposing the RFA would need to supply sufficient clinical background to allow an informed decision to be made to accept, or reject, the RFA.

The review panel would need to meet weekly, either virtually or face to face, and the booking office would be responsible for sending the list of RFAs to be reviewed. Where there is disagreement, the panel would vote with a majority ruling. The chair reserves the casting vote.

LHDs may already have an appropriate committee that could incorporate the role of the review panel. It is proposed that the establishment of this mechanism should be added to the Elective Surgery Access Policy.

Figure 1: Process for the Review Panel for Surgical Activity



Proposed procedures to be added to list of cosmetic and discretionary surgery

The current Elective Surgery Access Policy documents several cosmetic and discretionary procedures that require the approval of the LHD clinical directors of surgical services or equivalent. This approval is given in consultation with senior management before the procedure is included in the waitlist. In these cases when a patient is referred, the referring doctor needs to document on the RFA form objective medical criteria supporting the decision for surgery for all procedures that may be considered cosmetic or discretionary. This requirement supports appropriate documentation of clinical decision-making and the review process. The patient should be advised when the RFA is going through the approval process. This list of discretionary procedures will be expanded to include procedures where there is demonstrated evidence for low value in terms of patient benefit, as well as consensus from relevant craft groups.

This document also proposes procedures to be added to the list of cosmetic and discretionary surgery in the Elective Surgery Access Policy. In the absence of these procedures currently being included in the Elective Surgery Access Policy, sites are encouraged to use the proposed procedures as a starting point to determine which additional procedures could be incorporated into the Review Panel for Surgical Activity process locally.

The following procedures have been identified in the literature as potentially low value procedures, except in certain circumstances.¹ It is proposed this list of procedures be added to the discretionary list. The RFA would need to be accompanied by clinical justification that allows an informed decision to be made by the clinical director of surgery (or equivalent) in consultation with the Review Panel for Surgical Activity. It is also proposed that these procedures be added to the electronic Recommendation for Admission booking system so that they can be highlighted on presentation.

Elective procedures

- Knee arthroscopy (outside accepted criteria)
- Tonsillectomy (outside accepted criteria)
- Myringotomy/grommets (outside accepted criteria)
- Hysterectomy
- Asymptomatic hernia repair
- Lumbar spinal fusion for back pain alone
- Colonoscopy
 - cancer surveillance
 - constipation
- Cholecystectomy – asymptomatic stone

Evidence and indications for these procedures are included under Procedures and existing indications.

Communication plan

Concepts around value-based care in the broader sense need to be understood by the wider group of surgeons in NSW.

It is also proposed that the Surgical Services Taskforce disseminate these changes to the clinician community, including primary care clinicians and also to the general community. Each clinical director will inform their Division of Surgery to alert clinicians that clinical justification needs to be robust for these RFAs to be accepted.

Monitoring and measurement framework

A robust measurement and monitoring framework needs to be established in conjunction with the System Information and Analytics branch of the NSW Ministry of Health. The aim is to discover how many of these procedures are being performed in

the public health system by LHD and by procedure. It is proposed that a monitoring and reporting framework be established to identify individuals within an LHD whose rate of performing operations that are listed is outside a norm established by peers. These reports are to be discussed by the multidisciplinary team process. Suitable strategies will then be devised to address these excesses. Overall success will be gauged by surgery being performed for the appropriate indications.

Sites should include patient reported measures (PRMs) to support their monitoring and evaluation, and specifically the outcomes and experiences of people who have received care. PRMs give patients the opportunity to provide direct, timely feedback about their health-related experiences and outcomes. This feedback helps drive improvements in care and supports clinicians to identify if a patient is getting value from their treatment.

Procedures and existing indications

This section outlines relevant procedures as identified through the literature and includes available indications from colleges, associations or other jurisdictions. Supporting evidence can be found at the various website links provided.

Knee arthroscopy

The Australian Knee Society has developed a Position Statement on Arthroscopic Surgery of the Knee, including reference to the presence of osteoarthritis or degenerative joint disease which states:

“Arthroscopic debridement, and/or lavage, has been shown to have no beneficial effect on the natural history of osteoarthritis, nor is it indicated as a primary treatment in the management of osteoarthritis. However, this does not preclude the judicious use of arthroscopic surgery, when

indicated, to manage symptomatic coexisting pathology, in the presence of osteoarthritis or degeneration. Partial medial meniscectomy is not indicated as an initial treatment for atraumatic tears of degenerative menisci, excluding bucket handle tears and surgeon assessed locked or locking knees.”^{2 (p.1)}

The position statement outlines certain clinical scenarios in which arthroscopic surgery, in the presence of osteoarthritis, may be appropriate. These include this list from the position statement:

- known or suspected septic arthritis
- symptomatic non-repairable meniscal tears after failure of an appropriate trial of a structured rehabilitation program
- symptomatic loose bodies
- surgeon-assessed locked or locking knees
- traumatic or atraumatic meniscal tears that require repair
- inflammatory arthropathy requiring synovectomy
- synovial pathology requiring biopsy or resection
- large unstable chondral pathology causing surgeon assessed locking or locked knee
- as an adjunct to, and in combination with, other surgical procedures as appropriate for osteoarthritis, for example, high tibial osteotomy and patello-femoral realignment
- diagnostic arthroscopy when the diagnosis is unclear on MRI or MRI is not possible, and the symptoms are not of osteoarthritis.^{2 (p.1)}

Tonsillectomy

A joint position paper of the Paediatrics and Child Health Division of the Royal Australasian College of Physicians (RACP) and The Australian Society of Otolaryngology Head and Neck Surgery (ASOHNS) details indications for tonsillectomy and adenotonsillectomy in children.

The position paper reaches the following conclusions about:

1. **The indications for tonsillectomy/adenotonsillectomy:**
 - a. upper airway obstruction in children with obstructive sleep apnoea
 - b. frequent recurrent acute tonsillitis
 - c. peritonsillar abscess
 - d. suspected neoplasm
 - e. uncommon indications.
2. **Current suboptimal rates of adenotonsillectomy for obstructive sleep apnoea in Australia and New Zealand**

The incidence of adenotonsillectomy in Australia and New Zealand for this indication alone is significantly below that expected. The analysis suggests that only one in seven to 10 children who could benefit from adenotonsillectomy is being treated.

3. **Frequent recurrent acute tonsillitis**

Tonsillectomy as per Paradise criteria is supported.

4. **Operative management**

High-risk children for tonsillectomy/adenotonsillectomy should be identified, and their operation should be performed in a hospital with appropriate paediatric intra and post-operative airway support services.^{3 (pg. 5)}

Myringotomy/grommets

Safer Care Victoria's (SCV) [advice](#) states, "Do not perform myringotomy alone as treatment for middle ear disease. Myringotomy alone is ineffective in managing otitis media with effusion or acute otitis media."⁴

SCV provides the following advice on when the procedure is indicated.

"Myringotomy provides little benefit when performed without placing a middle ear ventilation tube (MEVT) into the tympanic membrane.

"There are certain circumstances where myringotomy as a diagnostic procedure (without MEVT) may be indicated.

"Tympanocentesis (passing a needle through the tympanic membrane into the middle ear cleft) has a range of indications such as delivering medications to the middle ear cleft but is used in only a very limited and specific range of conditions, generally under the care of a specialist ENT surgeon."⁴

SCV best-care recommendations include these.

"An 'active observation period' of middle ear disease for a period of three months should occur before considering intervention.

"During the active observation period, advice on educational and behavioural strategies to minimise the effects of hearing loss should be offered.

"Persistent bilateral middle ear disease (longer than three months) should indicate the need for a hearing assessment. Further management and intervention should be discussed with a healthcare provider."⁴

The evidence SCV used to form these recommendations is available on their [website](#).

Hysterectomy

This is Safer Care Victoria's [advice](#).

“Minimally invasive approaches to hysterectomy should be performed, whenever feasible.

“Vaginal and laparoscopic procedures are considered ‘minimally invasive’ surgical approaches and are typically associated with shorter hospitalisation and recovery times. The vaginal approach is preferred among the minimally invasive approaches.

“Laparoscopic hysterectomy is a preferable alternative to open abdominal hysterectomy for those patients in whom a vaginal hysterectomy is not indicated or feasible.”

SCV provides advice regarding when the procedure is indicated. SCV notes that the choice of the hysterectomy route is individual to the patient with consideration to certain factors. It lists factors as being:

- the extent of gynaecological pathology
- the relative risks and benefits of the hysterectomy route
- the need to perform additional procedures
- patient preference.⁵

SCV best-care recommendations include:

“Less invasive, uterine-preserving surgical procedures should be offered before hysterectomy, if indicated.

“Should a hysterectomy be deemed necessary, minimally invasive approaches to hysterectomy should be performed, whenever feasible. Vaginal and laparoscopic procedures are considered ‘minimally invasive’.”⁵

The evidence SCV used to form these recommendations is available on their [website](#).

Asymptomatic hernia repair

The Royal Australasian College of Surgeons (RACS), addresses asymptomatic hernia repair via Choosing Wisely Australia, a web-based initiative of NPS MedicineWise in partnership with Australian health professional colleges, societies and associations.

RACS advises repair of minimally symptomatic or asymptomatic hernias should not be performed without careful consideration, particularly in patients who have significant co-morbidities.

“The proportion of patients presenting with inguinal hernias who are suffering significant co-morbidities is increasing. In these populations and in the presence of multiple of co-morbidities, the importance of carefully assessing the risks and benefits of surgical intervention is vital. Studies have shown that adoption of a watch and wait approach does not heighten the risk of the patient developing more severe symptoms.

“In cases of minimally symptomatic and asymptomatic inguinal hernias, the patient’s prognosis and long-term health may be improved by non-surgical intervention. Ongoing surgical review is required to ensure that an individual’s condition is monitored and that a re-evaluation of their surgical need is made should their symptoms increase in severity.”⁶

Lumbar spinal fusion for back pain alone

SCV [advice](#) states, “Spinal fusion surgery is not indicated as a treatment for chronic axial low back pain in most circumstances.

“Evidence suggests there is no significant benefit to spinal fusion surgery to treat chronic axial low back pain except in certain circumstances. Chronic pain is a symptom, not a diagnosis.”⁷

SCV provides the following advice regarding when the procedure is indicated. “Spinal fusion may be

considered for managing chronic axial low back pain if it has been caused by trauma, cancer, infection or other pathology where there is painful deformity, instability or neural compression.”⁷

SCV best-care recommendations note that treatment options for chronic axial low back pain include:

- exercise
- weight loss when indicated
- education and self-management
- psychological therapies (such as cognitive behaviour therapy)
- multidisciplinary biopsychosocial rehabilitation
- pharmacological therapies (to allow active therapy)
- physiotherapy.

“When spinal fusion is indicated, surgeons are encouraged to register the surgery on the [Australian Spine Registry](#).”⁷

The evidence SCV used to form these recommendations is available on their [website](#).

Colonoscopy

Cancer surveillance

The Gastroenterological Society of Australia (GESA), as highlighted through Choosing Wisely Australia, advises that colonoscopies should not be repeated more often than recommended by the National Health and Medical Research Council endorsed guidelines.

“Colonoscopy, with or without polypectomy, is an invasive procedure with a small but not insignificant risk of complications, including perforation or major haemorrhage postpolypectomy, depending on size of lesion. Surveillance colonoscopies place a significant burden on endoscopy services. Consequently, surveillance colonoscopy should be targeted at

those who are most likely to benefit and at the minimum frequency required to provide adequate protection against the development of cancer.

“Cancer Council Australia guidelines, endorsed by NHMRC, state that if one to two adenomas less than 1cm in diameter are removed via a high-quality colonoscopy, a follow up interval of five years is recommended. For larger adenomas, three or more adenomas or adenomas containing villous features or high-grade dysplasia, which are removed via a high-quality colonoscopy, the recommended follow-up period is three years.”⁸

SCV have also developed advice regarding diagnostic colonoscopy for long-standing constipation without other flags for significant pathology.

Constipation

SCV [advice](#) states, “A diagnostic colonoscopy is not indicated for long-standing (> 12 months) constipation with no critical factor (positive faecal test, anaemia, rectal bleeding, age ≥ 60 years) or other symptoms (altered bowel habit for at least six weeks and no more than 12 months, diarrhoea, unexplained abdominal pain or weight loss).”⁹

SCV provides the following advice regarding when the procedure is indicated.

“For a person under 60 years of age who has long-standing constipation, a diagnostic colonoscopy should only be considered when a family history of colon cancer indicates the need for a screening colonoscopy or any alarm features as described in the National Health Medical Research Council-endorsed clinical guidelines are present that indicate the need for a diagnostic colonoscopy.

“There are some patients who ignore new onset constipation for longer than 12 months and these are exceptions who would require a diagnostic constipation on the grounds of ‘change in bowel habit’.”⁹

SCV best-care recommendations include these points.

“A diagnostic colonoscopy for long-standing constipation is likely to have minimal yield.

“Undertaking a full patient history and physical examination, including a rectal examination, is recommended. If no critical factors or other symptoms are identified, conservative management is recommended.

“Conservative management should include elements of patient education, behaviour modification, dietary changes, bulk-forming laxatives and non-bulk-forming laxatives and enemas.

“If the patient exhibits no improvement through conservative management, imaging studies are indicated. At this stage, a diagnostic colonoscopy should be considered as part of management.”⁹

The evidence SCV used to form these recommendations is available on their [website](#).

Cholecystectomy – asymptomatic stone

Eighty percent of patients with gallstones are asymptomatic. The risk of developing biliary colic is 2–3% per year and 10% after five years. Any other gallstone-related complication has an incidence of 0.1–0.3% per year.^{10,11} Asymptomatic gallstones should be treated expectantly as the risks of surgery outweigh the likelihood of complications associated with the presence of gallstones.^{10,12-15}

Cholecystectomy through any means is not recommended in patients with asymptomatic gallstones who are undergoing abdominal surgery for another reason.¹⁰

Evidence-base and international recommendations are that asymptomatic gallstones should not be treated by cholecystectomy as the risks associated with the procedure outweigh the benefits and there is no economic benefit.

Cholecystectomy may be considered in patients **without** proven gallstones in cases of:

- gallbladder polyps >1 cm¹⁶
- recurrent proven pancreatitis not associated with other causes
- porcelain gallbladder (low evidence)
- hereditary spherocytosis or sickle cell disease (low evidence)¹¹
- chronic acalculus cholecystitis can be considered after a proven low ejection fraction of under 35% on dynamic HIDA scan AND presentation at a multidisciplinary team with upper gastrointestinal surgeons and gastroenterologists where consensus decision is to proceed to cholecystectomy after consideration of differential diagnosis.

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The Agency for Clinical Innovation (ACI) is the lead agency for innovation in clinical care.

We bring consumers, clinicians and health-care managers together to support the design, assessment and implementation of clinical innovations across the NSW public health system to change the way that care is delivered.

The ACI's clinical networks, institutes and taskforces are chaired by senior clinicians and consumers who have a keen interest and track record in innovative clinical care.

We also work closely with the Ministry of Health and the four other pillars of NSW Health to pilot, scale and spread solutions to healthcare system-wide challenges. We seek to improve the care and outcomes for patients by re-designing and transforming the NSW public health system.

Our innovations are:

- person-centred
- clinically-led
- evidence-based
- value-driven.

aci.health.nsw.gov.au



AGENCY FOR
**CLINICAL
INNOVATION**

*Our vision is to create the future of healthcare,
and healthier futures for the people of NSW.*