

A QASM



Volume One (January 2022): Decision-to-Operate

A Queensland Audit of Surgical Mortality (QASM) assessor recently stated: **Surgeons are taught throughout their training how and when to operate. The hardest decision for a surgeon is to say no and recognise the patients that shouldn't be operated on. This is not something that is easily taught, and the answer is not found in a textbook.**

The case study and data presented give QASM's perspective on the decision-to-operate theme and an overview of the number of patients' episodes of care in Queensland hospitals with surgical operations.

QASM CASE STUDY

A female patient (age late 80s) presented to a regional public hospital with exertional dyspnoea and neck pain.

Her comorbidities included rheumatic fever with a mitral valve replacement, and tricuspid annuloplasty 14 years previously. Her bioprosthetic valve had deteriorated causing increasing mitral stenosis.

On presentation, her diagnosis was heart failure and constipation, and she was transferred to a regional private hospital (under her usual cardiologist).

At the private hospital, her diagnosis was severe bioprosthetic mitral stenosis. She was treated with aperients and her heart failure medications were changed. She showed minimal improvement and no further treatment options could be offered. A cardiology consultant-to-consultant referral was made to a tertiary hospital to consider valvular intervention.

At the tertiary hospital, she underwent a re-evaluation. This confirmed severe prosthetic mitral valve stenosis together with significant tricuspid regurgitation, severe right ventricular dysfunction, severe pulmonary hypertension and aortic regurgitation with aortic sclerosis.

A surgical opinion was sought because the patient also had possible angina, hypertension, atrial fibrillation on oral anticoagulation, a dual chamber permanent pacemaker, renal insufficiency with a glomerular filtration rate of 35 mL/min/1.73 m², bronchiectasis, osteoporosis and gastro-oesophageal reflux. The reviewing surgeon felt that redo surgery was not an option because the risk was unacceptable.

The multidisciplinary team considered the issue of a percutaneous replacement. The patient was reviewed again. The high risks of the procedure were discussed with the patient and her family. The patient insisted on the percutaneous valve replacement.

The percutaneous valve procedure was complicated by ventricular fibrillation and cardiac tamponade. A partial lower sternotomy was performed and the pericardial collection was drained.

A decision was made against further intervention. All further resuscitation and active measures ceased.

Summary

This case highlights the complexities of decision making and patient selection for intervention of any type.

Lessons learned

- 1. Patient selection:**
The benefits of surgery must outweigh the risks when selecting a patient for any intervention.
- 2. Comprehensive assessment:**
Patients considered for any operation must have a comprehensive, holistic assessment with appropriate investigations.
- 3. Long-term outcomes:**
Realistic long-term outcomes must be discussed with the patient.
- 4. Decision to operate:**
Patients with a poor prognosis identified preoperatively should be offered palliative care.
- 5. Communication and second opinions:**
It may be appropriate to confer with another senior colleague(s) to obtain a consensus view prior to embarking on possibly futile surgery.

Resources

- Davies A, Roberts-Thompson R, Puri R, Psaltis P. Position Statements for Transcatheter Valve Therapies in Australia: Accreditation Standards and Heart Team Opportunities. *Heart Lung Circ.* 2021. 30 (12), p. 1787–1789, e119–e141. DOI: <https://doi.org/10.1016/j.hlc.2021.09.011>
- Muller DWM, Almeida A, Camuglia A, Walters D, Passage J, Scalia GM et al on behalf of Cardiac Society of Australia and New Zealand (CSANZ) and Australian & New Zealand Society of Cardiac & Thoracic Surgeons (ANZSCTS). Operator and Institutional Requirements for Transcatheter Mitral Valve Therapies in Australia: a CSANZ and ANZSCTS Position Statement. *Heart Lung Circ.* 2021. 30 (12), 1805–1810. DOI: <https://doi.org/10.1016/j.hlc.2021.07.001>
- Bennetts J, Sinhal A, Walters D, MacIsaac A, Fayers T, Lo S et al. 2021 CSANZ and ANZSCTS Position Statement on the Operator and Institutional Requirements for a Transcatheter Aortic Valve Implantation (TAVI) Program in Australia. *Heart Lung Circ.* 2021. 30 (12), 1811–1810. DOI: <https://doi.org/10.1016/j.hlc.2021.07.017>
- Clinical Decision Making <https://www.surgeons.org/Education/professional-development/all-professional-development-activities/clinical-decision-making>.
- Non-Technical Skills for Surgeons (NOTSS) <https://www.surgeons.org/Education/professional-development/all-professional-development-activities/non-technical-skills-for-surgeons-notss>.
- Safer Surgical Teamwork <https://www.surgeons.org/Education/professional-development/all-professional-development-activities/safer-surgical-teamwork-sst>

QUEENSLAND PATIENTS (1 July 2016–30 June 2021)

The Queensland Hospital Admitted Patient Data Collection (QHAPDC) data were reviewed to include Queensland patients admitted to public and private hospitals for longer than 24 hours. Of the 1,951,043 episodes of care included, 1,009,631 were from public hospitals and 941,412 were from private hospitals.

Patients admitted to private hospitals were more likely to have operations in their episodes of care than public patients (Table 1), regardless of the intervention type.

Table 1. Public and private hospital patients who had an operation, by intervention type, 1 July 2016–30 June 2021

Intervention type	Public hospital		Private hospital		Risk ratio (95% CI)
	Episodes	Surgical operations (%)	Episodes	Surgical operations (%)	
Medical	248,229	92,354 (37.2)	100,597	44,740 (44.5)	1.20 (1.19–1.21)
Other*	112,605	75,731 (67.3)	80,503	69,388 (86.2)	1.28 (1.28–1.29)
Surgical*	648,797	608,012 (93.7)	760,312	744,932 (98.0)	1.05 (1.05–1.05)
Total	1,009,631	776,097 (76.9)	941,412	859,060 (91.3)	1.19 (1.19 – 1.19)

Abbreviation: 95% CI = 95% confidence interval; reference group is public hospital patients

Notes: Episodes of care are for those patients admitted for longer than 24 hours.

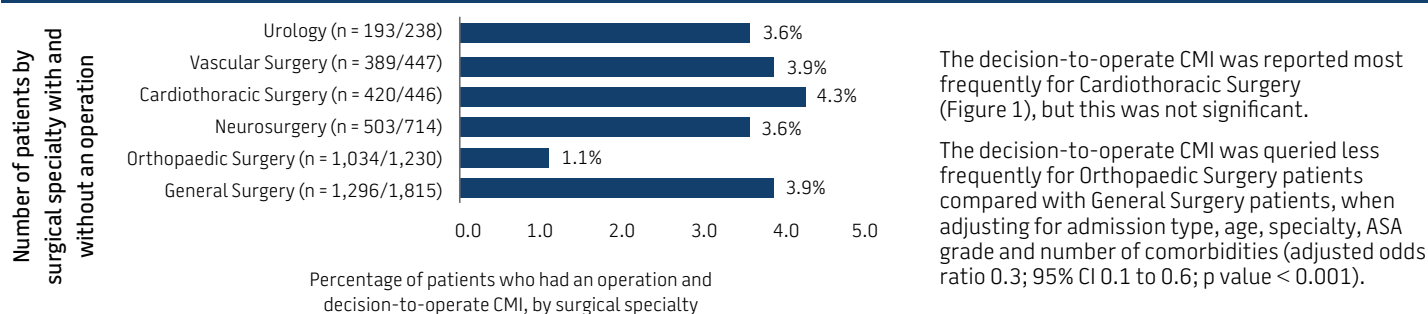
*Australian Refined-Diagnosis Related Group V10 applied, and the Diagnosis Related Group (DRG) partition was defined using standard DRG Medical partition and splitting the Intervention partition into either 'Surgical intervention' (according to 'Surgical DRGs') or 'Other intervention'.

QASM PATIENTS (1 July 2016–30 June 2021)

QASM reviewed 5,102 patients' in-hospital deaths and determined that 79.0% of these patients had a surgical procedure (4,027/ 5,098). QASM assessors judged that 21.4% (857/4,005) of patients who had an operation had clinical management issues (CMIs) and that patients care could have been improved. The decision-to-operate CMI was noted in 3.1% of patients who had an operation (125/4,005). These were in both public and private hospitals.

Although not significant, patients 65 years or older were more likely to have an operation and a decision-to-operate CMI than those patients younger than 65 years, when adjusting for admission type (i.e. emergency or elective), age, specialty, ASA grade and number of comorbidities (adjusted odds ratio 1.5; 95% confidence interval [CI] 1.0 to 2.3; p value = 0.06) (data not shown).

Figure 1. Proportion of patients who had an operation and a decision-to-operate clinical management issue by surgical specialty, 1 July 2016–30 June 2021



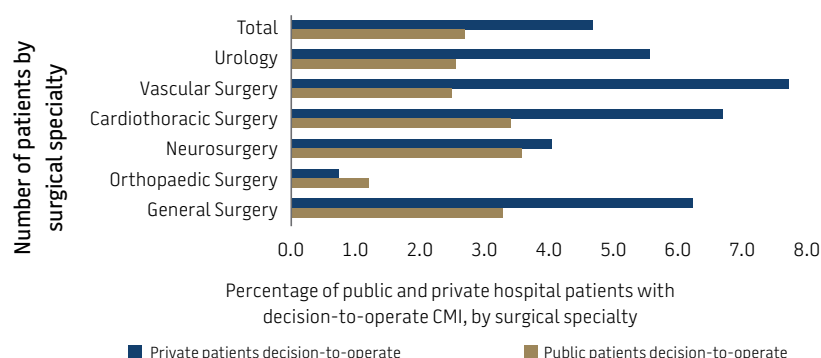
The decision-to-operate CMI was reported most frequently for Cardiothoracic Surgery (Figure 1), but this was not significant.

The decision-to-operate CMI was queried less frequently for Orthopaedic Surgery patients compared with General Surgery patients, when adjusting for admission type, age, specialty, ASA grade and number of comorbidities (adjusted odds ratio 0.3; 95% CI 0.1 to 0.6; p value < 0.001).

Abbreviation: CMI = clinical management issue

Note: Surgical specialties with less than 100 patients admitted were excluded as their numbers are too small to report decision-to-operate CMIs; these specialties include paediatric, plastic, obstetrics/gynaecology, otolaryngology head and neck, ophthalmology and oral/maxillofacial, obstetrics/gynaecology (n = 192).

Figure 2. The proportion of public and private patients who had an operation and the decision-to-operate clinical management issue by surgical specialty, 1 July 2016–30 June 2021



By surgical specialty, the decision-to-operate CMI was more frequent in private patients compared to public patients, except for orthopaedic patients (Figure 2).

The decision-to-operate CMI was not significantly different between private and public hospitals when adjusting for admission type, age, specialty, ASA grade and number of comorbidities (adjusted odds ratio 1.5; 95% CI 1.0 to 2.3; p value = 0.06).

Discussion

The QASM findings presented could be due to the private hospitals undertaking more elective uncomplicated surgery. The QASM findings presented implies that the decision to operate rests only on the surgeon, but as the case study demonstrates, patients could be the ones advocating for surgery. These findings highlight the importance of non-technical skills training for surgeons so that they are empowered to advocate against surgery.

Acknowledgments

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*Griffiths University: Robert S Ware & Emily Young (Statisticians)

*QASM Assessors: The case study is edited from a QASM assessment that was generated by an expert surgeon in the field. Any recommendations relate to the case as it was presented.