# Surgical service centralisation in Australia versus choice and quality of life for rural patients

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## ABSTRACT

- High patient volume for both hospitals and surgeons is an important determinant of operative mortality and outcome for complex and infrequently performed operations.
- The 13% of Australia's population who live in rural and remote areas often choose to have surgery close to home and support networks despite the potentially higher operative mortality and morbidity.
- Rural patients should be able to make an informed choice about having their surgery locally. Rural and metropolitan surgeons should discuss and reach mutual agreement on where each patient is best treated.
- A balance must be struck between quality of services that can be provided locally and geographic convenience.


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Australia is a vast country with a widely dispersed population. A third of Australians live outside major cities; nearly half of these live in rural and remote areas.[1] Because of evidence that better surgical outcomes are achieved with increased specialisation and higher provider volumes[2-4] (which tend to be available in larger city centres), a trend towards urban centralisation of surgical services has developed.[4] However, as a matter of principle it is important to ensure that high-standard surgical care is accessible to Australians who are geographically isolated from the expertise and facilities available in our major cities.[5]

High-volume centres are usually large metropolitan hospitals, which are likely to have superior infrastructure and support services; are better able to offer improved postoperative care; and are more likely to adhere to established processes of care leading to better patient outcomes.[2,3] In such high-volume centres, there are also potential cost savings flowing from fewer postoperative complications and higher use of resources.[6-8] Support of volume-based referral initiatives is particularly strong in the field of cancer surgery, with one meta-analysis recommending the centralisation of most, if not all, oncological procedures.[4]

But what is the rural resident's perspective on urban centralisation of surgical services? Many rural patients choose to have their surgery with familiar and trusted physicians close to home, work, friends and family. Many struggle with separation from family and friends, time off work, the need to travel, and costs of accommodation.[9-11] General practitioners are happier referring patients for elective surgery at a familiar hospital which is convenient geographically.[12] Waiting times for appointments can also be shorter in a rural setting compared with a metropolitan centre of excellence.[13]

A number of studies have demonstrated rural patients' desires to have their treatment locally. Some women choose mastectomy by their local surgeon rather than travel for radiotherapy after breast conservation treatment for breast cancer.[14] Others requiring radiotherapy for breast cancer have shown a willingness to accept a delay to treatment of several weeks rather than leave their home town for earlier therapy.[15] One group of patients undergoing a total hip replacement expressed a preference for surgery at their local, small-volume centre rather than travel to a city some 60 kilometres away.[16]

In a study of how patients view the trade-off between lower operative mortality risk and benefits of local care, 100 patients were asked if they would choose to have a Whipple's pancreaticoduodenectomy performed locally, or travel 4 hours by car to a specialist centre, on the basis of a number of different mortality rate scenarios.[10] All patients stated a preference for surgery at their local hospital if the operative mortalities at the local hospital and the regional centre were the same. However, three-quarters indicated they would prefer the operation locally even if travel to a regional centre would result in lower operative mortality risk, and a quarter of patients indicated they would accept very high levels of operative mortality rather than travel to a regional centre. Older patients and those with fewer years of formal education were more likely to accept higher levels of additional risk to keep their care local.

If we accept that Australasian surgeons emerge from their Fellowship training fully competent in performing the core procedures of their specialty, why should it matter whether they continue to practise in a rural or metropolitan environment, as long as their results are good? Good outcomes are achieved through good training, attention to Continuing Medical Education (CME) and audit.[17] The Royal Australasian College of Surgeons (RACS) has developed a rural surgical training program encompassing both general surgery and orthopaedics.[18] On finishing their training in this scheme, graduating Fellows spend at least some time in a regional or rural area. The rural surgical training program aims to identify the needs of the community that the graduating Fellow will serve, and tries to ensure that the experience gained, either during or after advanced training, is appropriate. For established rural surgeons who wish to upgrade their skills and knowledge, the RACS provides a rural CME service,[18] and clinical rotations through specialty units are also available, funded by the RACS Ramsay Fellowship.

There are many examples of excellent outcomes from small-volume, rural centres. Robust studies in the fields of thyroid,[19] breast[20] and colorectal surgery[21] have been published. An unpublished audit of all total joint replacements performed at Bega District Hospital in rural New South Wales between 1999 and 2004 showed that although an average of only nine total knee replacements and 10 total hip replacements per surgeon per year were performed, more than 95% of patients were happy with the outcome of their operation. With no deep wound infections in the series, an acceptable rate of both total hip replacement dislocation and manipulations under anaesthetic following total knee replacement, as well as a combined post-operative mortality rate of only 0.7%, these results compare favourably with accepted standards.[22,23]

There is a role for urban specialised centres of excellence for the management of complex conditions or those requiring complex surgery, but core procedures within each surgical specialty — such as bowel resection, thyroidectomy, mastectomy, or joint replacement — should continue to be provided in rural areas. If these procedures were centralised, one consequence might be that rural surgeons leave their district. Surgeons choose to live and work in rural centres because of the professional challenges, the variety of work, the satisfaction of serving the community, and their enjoyment of the environment.[24] Rural communities also benefit from having local surgeons. Rural surgeons are a scarce and valuable resource, and must be encouraged to stay by including them in deliberations about change, maintaining essential surgical services, and making use of their full range of skills.

One key principle from the Australian Medical Workforce Advisory Committee's report in 2005 was that:

> All Australian citizens must have access to a good standard of surgical care irrespective of geography and economic status. In achieving this, convenience to the patient must be balanced against the quality of services that can be distributed to meet that convenience.[1]

The decision to undergo surgery in a low-volume centre is ultimately the patient's, after a fully informed and frank discussion with his or her surgeon about the risks and benefits. Individual surgeons should be able to quote their own outcome figures and complication rates for comparison with published standards to facilitate this. Rather than compete for patients and operations, small-volume and large-volume centres should cooperate: team members from both centres should participate in multidisciplinary meetings to plan patient care, and selected patients should be treated at either the smaller or larger centre after consideration of who is most likely to derive the most benefit at each location. This would spread the workload, maintain everyone's skills and knowledge, and provide the maximum benefit for the most people.

## Competing interests

None identified.

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