



Title	Centralization of Selected Surgical Procedures: Implications for Australia
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Reference	Report number 57. ISBN 0-909844-79-8. Link to full text report: www.surgeons.org/asernip-s/publications.htm

Aim

To assess the efficacy of centralizing 5 surgical procedures in the Australian setting: abdominal aortic aneurysms, knee arthroplasty, liver resection, esophagectomy, and prostatectomy. (The following Brief addresses 1 of the 5 procedures. For others, see the complete review.)

Conclusions and results

Abdominal aortic aneurysm

Unruptured: The relationship between hospital volume and both patient morbidity and length of stay was inconclusive. The data suggest an inverse relationship between hospital volume and patient mortality rates. None of the studies examined the relationship between surgeon volume and patient morbidity. Limited data support an inverse relationship between surgeon volume and patient mortality. One study reported a statistically significant inverse relationship between surgeon volume and length of stay.

Ruptured: None of the studies examined the relationship between hospital volume and patient morbidity. Limited data suggest a relationship between surgeon volume and patient mortality. Very limited data indicate that hospital volume does not affect length of stay. None of the studies examined the relationship between surgeon volume and patient morbidity. One study reported a statistically significant relationship between surgeon volume and both patient mortality and length of stay.

Recommendations

Classifications, Evidence rating: The evidence for this systematic review is rated as average.

Methods

Search strategy: Two search strategies were used – a broad search in MEDLINE, EMBASE, CINAHL, NHS CRD databases, and Current Contents Connect to identify the range of centralization studies on surgical procedures, followed by a second targeted search that utilized a separate procedure-specific search algo-

rithm in the databases listed above plus Clinical Trials Databases, Current Contents Connect, Current Controlled Trials, National Research Register, PubMed, and the Cochrane Library.

Study selection: Studies were included if they met the inclusion criteria and reported at least one of the following outcome measures: patient mortality, morbidity, and length of stay.

Data collection and analysis: Data were extracted by one researcher and checked by a second researcher using standardized data extraction tables developed *a priori*. When studies reported on overlapping patient groups, we used only the paper with the most complete data set.

Further research/reviews required

Each of the procedures of interest should continue to be monitored for relevant Australian data. Financial analyses should be commissioned to provide a representative assessment of the Australian healthcare system. Future research should utilize common clinical terminology, eg, uniform definitions of mortality and morbidity, to enable more efficacious comparisons. Australian-based research studies across a range of surgical procedures, utilizing common clinical terminology, must be conducted before the impact of centralization in Australia can be definitively assessed. Attention should be given to quality factors that affect skills development and maintenance of surgeons in low- and high-volume hospitals. These studies require nationally representative data from low- and high-volume Australian hospitals to assess standards of care to ensure that centralization is not instituted solely for political or financial reasons.