

The Role of Surgeon Specialization in Improving Patient Outcomes A Challenge for the Caribbean

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ABSTRACT

Progressive surgeon specialization has been shown to result in improved patient outcomes for many surgical procedures. This has been demonstrated in improved survival following cancer surgery and improved operative morbidity and mortality for other procedures. Concentrating complex surgical cases in centres where case volume and expertise exist should result in better overall surgical care delivery.

El Papel de la Especialización del Cirujano en el Mejoramiento de los Resultados Clínicos del Paciente: Un reto para el Caribe

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RESUMEN

La especialización del cirujano ha probado traer como consecuencia un mejoramiento de la evolución y el resultado clínico del paciente en muchos procedimientos quirúrgicos. Esto ha sido demostrado en el mejoramiento de la supervivencia luego de intervenciones quirúrgicas por cáncer y en la mejora en relación con la mortalidad y la morbilidad operativa en otros procedimientos. Concentrar los casos de cirugía compleja en centros caracterizados por el volumen de casos y la condición de experto de los cirujanos traería en general como consecuencia una mejor atención quirúrgica.

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VIEWPOINT

The experience of large high volume centres has demonstrated improved outcomes with a variety of surgical procedures. The procedures that have benefitted most are complex cardiovascular surgery and high-risk, advanced cancer operations (1, 2). Several reviews have shown a survival advantage in patients undergoing major cancer resections in high volume centres compared with the results of surgeons with lower case volume (3–5).

The arguments supporting the optimizing of surgical care by examining outcomes have been supported by surrogate measures of the quality of surgery such as the rates of readmission to hospital.

Reviews of the relationships between surgical volume and performance have revealed similar findings, leading researchers to the same conclusions. The findings have shown that procedural volume more than any other characteristic is the most important factor in deciding patient outcomes and more significantly mortality rates. (2) The differences between high-volume and low-volume centres are small for operations of low complexity such as appendectomy but are significant for major cardiovascular procedures and oncological surgical resections such as pancreaticoduodenectomy. Poor surgical outcomes associated with morbidity or mortality may become immediately apparent after intricate surgery on major organs such as the heart, brain or liver but may take several years to manifest after oncologic surgery.

An unequivocal answer to the question of whether patients do better with high volume surgical providers compared to low-volume providers is difficult to obtain without well-designed randomized trials. As a surrogate, researchers have looked at aggregated data from observational studies.

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Examination of the records of 100 000 men who underwent prostatectomy revealed a relationship between the volume of operations performed and outcome, reporting a 30% increase in readmission in low-volume *versus* high-volume centres (6). Similar results have been shown in studies of women undergoing curative breast cancer surgery with improved outcomes in high-volume centres, though these studies have been less conclusive. A study by Guller *et al* of 233 247 women with breast cancer showed that patients who had surgery performed in low-volume hospitals had a three-fold increased probability of dying from breast cancer (7). In another review by the West of Scotland Cancer Surveillance Unit, surgery performed by specialized and non-specialized breast surgeons showed that the 10-year survival was higher in patients who had surgery performed by specialist trained breast surgeons (5). These findings were irrespective of patient age, tumour size or the presence or absence of lymph node metastases.

Arguments by Sikora (8) and subsequently by Fisher *et al* (9) and Veronesi (10) have suggested that the differences in outcome between specialist and non-specialist centres reported in the literature for the treatment of breast cancer may be due to a lack of uniformity in the usage of adjuvant therapy rather than any difference in the type of surgical procedure performed. Several authors recommend caution in the acceptance of the results of volume outcome studies and are prepared to challenge the interpretation of the results where close scrutiny indicates that they may be compromised by flawed methodology.

Researchers have generally agreed with the results of volume outcome studies which recommend selective referral of complex surgical cases to high-volume centres because of a documented improved outcome but have been less supportive of results from studies on more easily learned procedures such as breast cancer surgery. Despite the advantages of selective referral of patients with complex surgical pathology to centres with known expertise there are some disadvantages.

One potential drawback of concentrating surgical procedures in high volume centres or centres where case volume coexists with perceived expertise is the demand that it places on patients and their families to travel to have surgical procedures performed.

There is also the additional concern that patients in the immediate catchment area of the hospital may be denied care because of the increased numbers of referrals from peripheral hospitals.

These challenges become even more relevant in the Caribbean where it is often difficult for a single surgeon to acquire expertise and case volume covering a wide range of surgical pathology. Since quality of care and surgical outcome has been shown to suffer adversely in this situation, modern-day surgical training should include an additional period of specialist training which would allow complex

high-risk procedures to be performed only by surgeons who have completed fellowships and acquired additional expertise.

Awareness of the benefits of specialization should further encourage surgical trainees and surgical educators particularly those in small territories to pursue and encourage additional specialization.

The use of surgical audit as a tool allowing critical assessment of patient care would further serve as a basis for the establishment of specialised units with improved results for various surgical procedures. These changes would also result in additional benefits including the abandonment of outmoded surgical procedures in favour of more current practice.

Despite the low volume of some surgical procedures performed in many Caribbean hospitals the outcome of these procedures can be further improved by the use of state-of-the-art equipment and higher staffing levels of specialised physicians and nurses. A recent review in US hospitals supports this view and showed that the outcome of procedures in low-volume well-staffed centres is comparable to those of high-volume hospitals.

The adoption of similar measures in the Caribbean should have equivalent results. The proportionately small volume of rare complex procedures could then be confined to hospitals where case volume and expertise co-exist.

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