Rural surgery

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In New Zealand, rural surgery (RS) is the practice of surgery in its provincial towns. This is in contrast to the surgery undertaken in the cities where secondary and tertiary hospitals are situated. Of course there are not clear-cut boundaries and our provincial base hospitals (including both secondary and tertiary hospitals) also provide surgical services to rural New Zealand.

The practice of rural surgery varies from small hospitals staffed by a sole surgeon, e.g. Taupo, and small hospitals with no local surgical staff but supporting outreach clinics from Base Hospital, e.g. Oamaru, to the larger rural hospitals with several general surgeons and some other specialties, and providing inpatient and outpatient care, e.g. Greymouth and Masterton. Some outreach clinics are provided from the private sector. Some minor (office type) surgery and endoscopy are provided through some of the outreach clinics.

In Australia 'rural' effectively covers all centres and smaller towns outside the seven state capitals. Membership of the Division of Rural Surgery of the Royal Australasian College of Surgeons (RACS) is open to all surgeons practising outside the state capitals. New Zealand members of this Division do not include surgeons working in larger metropolitan centres.

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Rural surgeons

In 1987 the NZ Committee of the RACS assessed our smaller hospitals – the size of Gisborne and less – and coined the term 'Peripheral Surgeons' for those staffing these hospitals. The term has not endured and the number and size of these hospitals has shrunk, but the population served remains much the same. At that time the population served by these hospitals was one-sixth of the national total. At the end of the previous Government's term, the Minister's *Report on Rural Health* indicated that 23% of our population lived in rural areas, including towns up to 10 000. For Mäori, 32% lived in rural New Zealand.

Even up to 30 years ago many of our smaller rural hospitals relied on the dedicated service of sole charge surgeons. Some were helped by GP-surgeons and in a few areas visiting specialists supplemented the local service with clinics and surgery. The local surgeons supervised the post-operative recovery of these patients.

By the 1980s GP-surgeons had largely disappeared, but several of the smaller hospitals had added a second surgeon to their staff. The larger rural hospitals were running surgical units with three surgeons. A broad base of surgery was offered with practitioners being general surgeons in the true sense of the word: tonsillectomy, caesarian section, thyroidectomy, internal fixation of a fractured neck of femur, mastectomy and colectomy were all part of such practice.

Anaesthesia was largely provided by Hospital Medical Officers (often with much experience if not specialist qualification) and GP-anaesthetists. A Diploma in Anaesthesia was a qualification of not too many years ago!

The rationalisation of services

By the late 1980s stronger winds of change were blowing – smaller hospitals were being threatened. Both the NZ Committee of the RACS and, to a lesser extent, the Faculty of Anaesthetists of the RACS were calling for greater safety standards.

With the health reforms of the early 1990s the Area Health Boards (the 'providers') and the Regional Health Authorities (the 'funders') increased pressure on the rural hospitals, largely in the guise of their surgical services being of doubtful safety and not being efficient in comparison to their metropolitan counterparts. As a result, small hospitals such as Gore, Balclutha, Oamaru, Dannevirke and Taumarunui lost their inpatient surgical services. Some larger hospitals such as Ashburton and Masterton were severely threatened but survived.

The so-called rationalisation of services was part of a larger cost-cutting exercise but was not honestly presented as such. The rural communities were very appreciative of their local surgical services and were not at all convinced there were significant shortcomings in safety or efficiency as the 'reformers' claimed. Passionate protests were evidence of this.

Interestingly, across the Tasman both Government and the RACS have strengthened rural surgery, especially through the Division of Rural Surgery of the RACS. Recruitment, training, continuing medical education and locum services are key areas of support.

In the latter part of this recent decade some smaller towns have had new health facilities built. Others have had some renovation. The aim has been to draw primary and secondary (rural hospital) care together for these communities. The extent of this blending has been greater in towns where the hospital relies heavily on local GPs to contribute to the out-of-hours duty roster. There is little evidence of it where the rural hospital is fully staffed by Medical Officers. You might well ask what does rural surgery have to do with these most recent changes?

The feasibility of a mobile theatre

It was against this backdrop of change that from early in 1996 a group within Healthcare Otago began exploring the feasibility of a mobile theatre (MT). An operating theatre is a relatively expensive facility and the concept of sharing one around had merit, rather than including one in each new, small hospital (where it would only have occasional use). The project foundered 18 months later as it was obvious it would not be a good business proposition if there was to be a significant proportion of public surgery done on it. (Remember the business goals of the Crown Health Enterprises? One was that 'Health' had to make money!) Not all was lost however. A survey had been conducted late in 1996 and this showed a good measure of support for the concept of a mobile theatre across the rural communities of Otago and Southland. GPs, Service Groups and 300 of the public were canvassed. Seeds had been sown.

> Our rural communities are still the backbone of our country

The idea was picked up in a fresh way in 1999 by a group from Christchurch. A New Zealand-wide 'think tank' held in Christchurch in August 1999 gave an indication of the strong support there was for the idea of a mobile theatre for the rural areas. After a great deal of hard work across the country the Government gave the project approval in December 2000, and now a highly sophisticated mobile theatre is providing opportunity for day surgery at such places as Te Puia, Oamaru and Balclutha.

There are potentially over a dozen small hospitals which can be served for a day, on a five-week cycle. The surgeon and anaesthetist travel from the provincial base hospital, perform the surgery, do a preasssesment clinic for the next circuit and return home in the evening. Depending on rural communities' requirements and availability of specialists, they will be able to have dental, ENT, general surgery (including endoscopy), gynaecology, orthopaedic and urology services available locally.

A specialist charge nurse, a driver and an anaesthetic technician travel with the MT and a team of local nurses provide support during and after surgery. These teams of nurses have had theatre and recovery room training provided through the project. Local GPs and rural hospital doctors will have opportunity to assist in surgery.

Concerns

Now that the 'Surgical Bus' is a reality, concerns and criticisms have again been expressed. How can a mobile unit provide a safe operating environment? The MT in fact meets all requirements for major surgery and is available to all secondary and tertiary hospitals for telepresence surgery (it is equipped with high band width video transmission).

Is post-operative safety jeopardised by the surgeon and anaesthetist returning to base at the end of the day? In many cases at present, rural day surgery patients return home from provincial centres the day following their surgery. Travel involves journeys of one to four hours and the immediate responsibility for their care returns to their GP. There are obvious advantages to having one's day surgery near to home. Further to this, itinerant day surgery has been shown to be safe.

The mobile theatre providing opportunities for day surgery in rural communities.

A comparison

An audit[1] of itinerant (visiting) day surgery done at Balclutha and Oamaru hospitals between 1995 and mid-1997 (before their former theatres were decommissioned) was compared with that done in Dunedin Hospital Day Surgery Unit for the same period. The need for overnight stay was of the order of 2% in all three places – it was mostly for pain, nausea and social circumstances. This is recognised and is why the MT will work alongside a small hospital where a medical officer is on duty.

Re-operation rate was very low and similar, with one patient from each of Balclutha (0.34%) and Oamaru (0.23%) requiring to travel to Base Hospital for that surgery. Five patients at Dunedin required reoperation (0.26%). Overall, complication rates were similar, and for wound haematoma and technical complications they were lower in the rural centres. There were no deaths in the study which surveyed 1 564 patients at Dunedin, 424 at Oamaru and 298 at Balclutha.

Cost

Some would say it is too expensive. The MT itself has cost $4.5M which, when shared around 10 rural hospitals, is low cost for a theatre, and that is not considering its potential use at secondary and tertiary hospitals for telepresence surgery.

The service has been funded to provide 1 000 case weights per year with $25M over five years. On a case weight basis this may look more expensive when compared to a base hospital day surgery rate. However, to provide the service in a rural area can lead to major savings to a patient's family, to an employer and DHB funding.

Within a year of Balclutha hospital losing its in-patient services the *Otago Daily Times* featured a child requiring day surgery tonsillectomy at Dunedin. The cost to the family for accommodation and loss of earnings was $800. The cost of a service depends on one's perspective. Compared, for example, to helicopter retrieval and transfer it is cheap at the price, and achieves a similar goal of equity of access.

Conclusion

It is hoped that the MT service will be consolidated across the country. It should supplement and strengthen the service offered by the secondary (district) and tertiary (metropolitan) hospitals. Rural primary health care should reap some benefits from this new service but it can not be a substitute for further necessary government support at this level.

Further initatives are necessary at government and RACS level to encourage recruitment and stability of medical and nursing staff for rural surgery. Our rural communities are still the backbone of our country; they still produce the major portion of our exports, and they deserve to be well looked after.

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Reference

1. Chin PK and Yule AG. Itinerant day surgery: Is it safe? Aust. NZ. J. Surg. 2000; 70:625.