

Remote Area Surgery

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The provision of surgical services in remote areas has been brought into focus in the past five years, because of changes that are taking place in the provision of healthcare. The drivers of these changes include the European Working Time Directive (EWTD) – limiting the number of hours worked, initially by junior medical staff and then by consultants – super-specialisation, and, more recently, proposed changes to training in 'Modernising Medical Careers'. The impact of these changes is felt more acutely in the remote communities of Scotland. This article sets out to discuss some of the potential problems along with an outline of feasible and sustainable solutions.

Rurality

Rurality has been clearly defined in a number of reports including the working group of the Royal College of Surgeons of Edinburgh (RCSEd) in 1998 and most recently in the British Medical Association (BMA) report on rural healthcare. There are six Remote and Rural Hospitals or Rural General Hospitals (RGHs) in Scotland as shown in figure 1, which are separated from larger District General Hospitals (DGHs) and Teaching Hospitals by the sea, lochs, mountain ranges or narrow winding roads.

Figure 1.

Rural General Hospitals in Scotland
1. Gilbert Bain Hospital, Lerwick, Shetland
2. Balfour Hospital, Kirkwall, Orkney
3. Caithness General Hospital, Wick
4. Western Isles Hospital, Stornoway
5. Belford Hospital, Fort William
6. Lorne and the Islands Hospital, Oban

The resident populations served by each of the hospitals vary between 19,000 and 34,000. As there is a small base population for each of the hospitals, the number of cases for each super-specialty is quite small and it may be argued would lead to the deskilling of any 'occasional operator' consultant. This, however, does not take into account the huge numbers of visitors to the area, particularly during the summer months. For example, the Belford Hospital serving Fort William with a resident population of 20,000 also has outreach clinics in Skye and Lochalsh with a population of 14,000. During the winter months the population almost doubles at weekends in Fort William because of winter sports activities including skiing, snowboarding, ice-climbing and winter mountaineering. During the summer, between May and September the population will often triple giving a proportional increase to the workload of the hospital.

Skills, Specialisation and Training

The required skills of the surgeons vary between each of the remote area hospital sites. In Fort William, an emphasis on trauma surgery is appropriate whereas in the islands some involvement in obstetrics and gynaecology is appropriate. The rural general surgeon will have an elective workload including the major super-specialisms of general surgery, urology, orthopaedics, plastics and paediatric surgery. In addition, skills are required to deal with emergencies in neurosurgery, cardiothoracic surgery and obstetrics and gynaecology. The surgical service requires the support of consultant-led anaesthetic and medical units.

During the past decade, there has been a definite planned move towards superspecialisation with the development of Specialty Associations and higher exams within each specialty to achieve Certificate of Completion of Surgical Training (CCST). General Surgery has therefore been divided into several superspecialties including upper gastrointestinal, hepatobiliary, colorectal, vascular, breast, and endocrine surgery. Urology, orthopaedics, and paediatric surgery have been

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established as separate specialties since early in the 20th century. This formation of superspecialists will inevitably lead to centralisation of services in Scotland and this could reduce acute hospital services to 3 or 4 major urban DGH/Teaching hospitals. This, however, has not taken into account the geography of Scotland where at least a fifth of its population live in rural communities and there is therefore the problem of transporting inadequately resuscitated and unstable patients over large distances.

Public Interest

During 2004 there were a significant number of protests objecting to the possible withdrawal of acute medical, surgical and obstetric services from the more remote communities. In particular, in Fort William a meeting was called by the West Highland Project, which was looking at a possibility of merging services in Oban and Fort William, to inform the public of two emerging options for delivery of acute hospital care in the West Highlands. 2,800 people attended the meeting, of which over 1,000 had to be turned away. This represents between 15 and 20% of the population and the equivalent at a similar meeting held in Glasgow would have had a turnout of 80,000 people. An alternative option to the proposed downgrading of one or both of the hospitals to sub-acute or community hospitals in the West Highlands was proposed at that meeting. However, the committee of the West Highland Project was reluctant to consider the alternative solution and this led to 5,900 letters being written by the Lochaber community to the Chair of Highland Health Board. Following this, a Solutions Group was proposed which began work in March 2004 and delivered a report in October 2004. This gave a definition of the consultant-led RGH working in Managed Clinical Networks (MCNs) with bigger hospitals. It raised the possibility of cooperation with another RGH in Oban for scheduled care and planned a pilot study of overnight emergency cover.*

The EWTD reduces the hours of work for the consultant surgeon and so a rota based on four surgeons for the rural general hospital has been defined in the West Highland Solutions Group report. The recommended number of surgeons per head of population is 1:24,000 and this rota is then open to the criticism of over-provision of surgeons. A possible defence is that the rural surgeon has elective and emergency responsibilities for a wide variety of specialities and is therefore different from the general surgeon of the standard DGH who is normally supported by the appropriate specialist colleagues. The elective operative skills of the rural surgeon could be employed by either importing selected patients for operation in the RGH or by the surgeon travelling to a larger hospital to operate. The rural surgeon is also well-trained for providing a visiting surgical service to even more remote hospitals, for example Belford Hospital consultants visiting Skye and Oban Hospital consultants visiting Campbeltown. Furthermore the surgeons, along with medical and anaesthetic colleagues, will be more involved in teaching of medical students if the recommendations of the recent BMA report are fulfilled.

Losing Rural Hospitals – consequences

A recent survey by the Scottish Centre for Social Research revealed that 63% of people would choose to have more general hospitals closer to home rather than more hospitals with special expertise at a distance. The implications of the loss of RGH consultants would result in more patients having to travel to the already overcrowded city centre units for elective and emergency care. Following a prospective audit of all the medical and surgical admissions to the Belford Hospital over a three-month period, it has been estimated that 1050 extra emergency patients and 180 elective patients for operation would have to travel to Raigmore Hospital annually.

Standards – networks

Informal networks of clinicians have, of necessity, existed between the RGHs and Tertiary Referral Centres (DGHs/Teaching Hospitals) before managed clinical networks were emphasised in the Acute Services Review in Scotland. These networks can ensure the necessary levels of safety and sustainability of specialist care in the RGH. Furthermore, they allow these services to be delivered to the patient closer to their homes. MCNs are becoming more formalised with executive committees mapping out the patient pathways, applying the national standards for care

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and coordinating the collection of audit data. Consultants from remote and rural hospitals are now represented on these committees.

Standards – interaction

Successful working of these networks involves video-conferencing links for multi-disciplinary team meetings to enable involved clinicians and specialist nurses to discuss the management of each patient. Joint operating already takes place between the surgeons from the RGHs and DGHs/Teaching Hospitals in either hospital depending on the complexity of the procedure or associated medical conditions of the patients. This has been happening regularly for five years between consultants from Raigmore Hospital (DGH) and the Belford Hospital (RGH) in urology and in colorectal surgery. Joint clinics have occurred in medical practice for conditions such as diabetes mellitus. Teleradiology, the transfer of x-rays between hospitals electronically, enables the consultant general surgeon in a RGH to manage orthopaedic injuries in conjunction with the orthopaedic surgeons in the DGH/Teaching Hospital. This has the advantage of downscaling emergencies significantly, obviates the need for transfer of patients in 50% of cases and allows planned transfer for planned surgery. Within the managed clinical networks, data is being collected centrally to monitor the quality of care and the results of treatment. These MCNs are an established way to overcome the territorial nature of superspecialisms and allow generalists to work alongside superspecialists. It also enables patients to have procedures and follow-up closer to home, and removes the potential distress caused by long or difficult journeys to and from treatment, and prevents separation from the emotional support of families.

Standards – audit

However, lower standards of care in the RGHs should not be acceptable. Audit of surgical procedures in the rural hospitals should meet the appropriate outcomes. Rural surgeons in Australia have reported satisfactory results from colorectal cancer management in terms of surgical complications and survival. A report of ten years of colorectal cancer management at the Belford Hospital, now in preparation, shows similar results. Laparoscopic cholecystectomy has also been shown to be safe and feasible with no common bile duct injuries or deaths following the first two hundred procedures at the Belford Hospital. Reports of centralisation of trauma care have not always considered the difficulties of transporting casualties over difficult terrain and in severe weather. The Scottish Trauma Audit Group has been collecting data on trauma patients from 24 Scottish hospitals over the past two decades. They set seven audit standards relating to the speed with which patients were seen, consultant involvement in resuscitation, and the use of the resuscitation area of the accident and emergency departments. In the last year reported, the Belford Hospital was one of only two hospitals meeting the standards. These examples emphasise that quality care can be provided in the smaller units within the context of a network.

Recruitment

A strategy for the recruitment of consultants and other staff in remote area hospitals is imperative. This should highlight the positive aspects of working in RGHs and the quality of life in the Highlands and Islands. Important features include – a beautiful place to live and work, very low crime rates, more autonomy and job satisfaction, a wide range of general medical and surgical patients, good schools for childrens' education and easy access to many outdoor activities. There is also easy access to work without the traffic jams that are prevalent in every city. In the short-term, there will be positive recruitment of trained consultants or those approaching the end of their training, which will involve the West Highland Medical website and may require the use of a professional recruitment agency. It could also be enhanced by using the Remote and Rural (salary) Supplement proposed in the new consultant contract. The medium-term involves informing junior doctors about this type of work. The Royal Australasian College of Surgeons has developed a curriculum for education and training of Australian surgeons for rural surgery which can be accessed on its website. A two year post-CCST surgical training scheme has been instituted in the North of Scotland post-graduate deanery; the first surgeon completing this scheme has been appointed to the Gilbert Bain Hospital, Lerwick, Shetland.

Medical Students

The long-term plans for recruitment involve the education of students. Placement of final year students from Aberdeen in Fort William and Dundee students in Oban will give them an opportunity to experience rural surgery. This will give them first-hand experience of rural medical work and the chance to see rural consultants as positive role models. Rural consultants are also encouraged to apply for Honorary Senior Lectureships in the Medical Schools to enhance their professional contacts and take an active role in undergraduate medical education. There was evidence of interest amongst students at a recent RCSEd Careers Day held in Dundee in May 2004. One hundred and seven students who were interested in a surgical career from the final two years of the Scottish Medical Schools were asked to indicate the specialties that interested them (they were allowed to choose more than one). Figure 2 shows the favourable position of remote and rural surgery.

Figure 2.

Percentage of Scottish medical students interested in a career in surgery, by specialty	
Orthopaedics	54%
General Surgery	50%
Accident and Emergency	42%
Paediatric Surgery	24%
Remote and Rural Surgery	21%
Plastic Surgery	13%
Ophthalmology	13%
Maxillofacial Surgery	8%
Urology	7%
Ear, Nose and Throat surgery	6%

There is also evidence that junior doctors are increasingly keen to work in a hospital where they can train under the supervision of generalists, and perhaps experience a wide range of acute care.

Conclusion

This article describes some of the elements of remote area surgery delivered in the context of the RGH. It relies on the well-trained generalist who works in a series of MCNs providing care as close to the patient's home as is compatible with the provision of high-quality care. It involves an understanding by the superspecialist of the skills of the rural surgeon and facilities in the RGH, so that patients can have appropriate care and procedures in shared-care. Finally, the rural surgeon needs to have the honesty and humility to refer on those cases which exceed the facilities in the RGH or his or her expertise.

**Editor's note: A virtual pilot of a plan for consultant cross-cover between the RGHs in Fort William and Oban has been carried out over a three-week period. The plan was deemed unimplementable on the grounds of the safety of acutely ill patients and because of communications difficulties. The detailed findings are currently undergoing a full review.*

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