



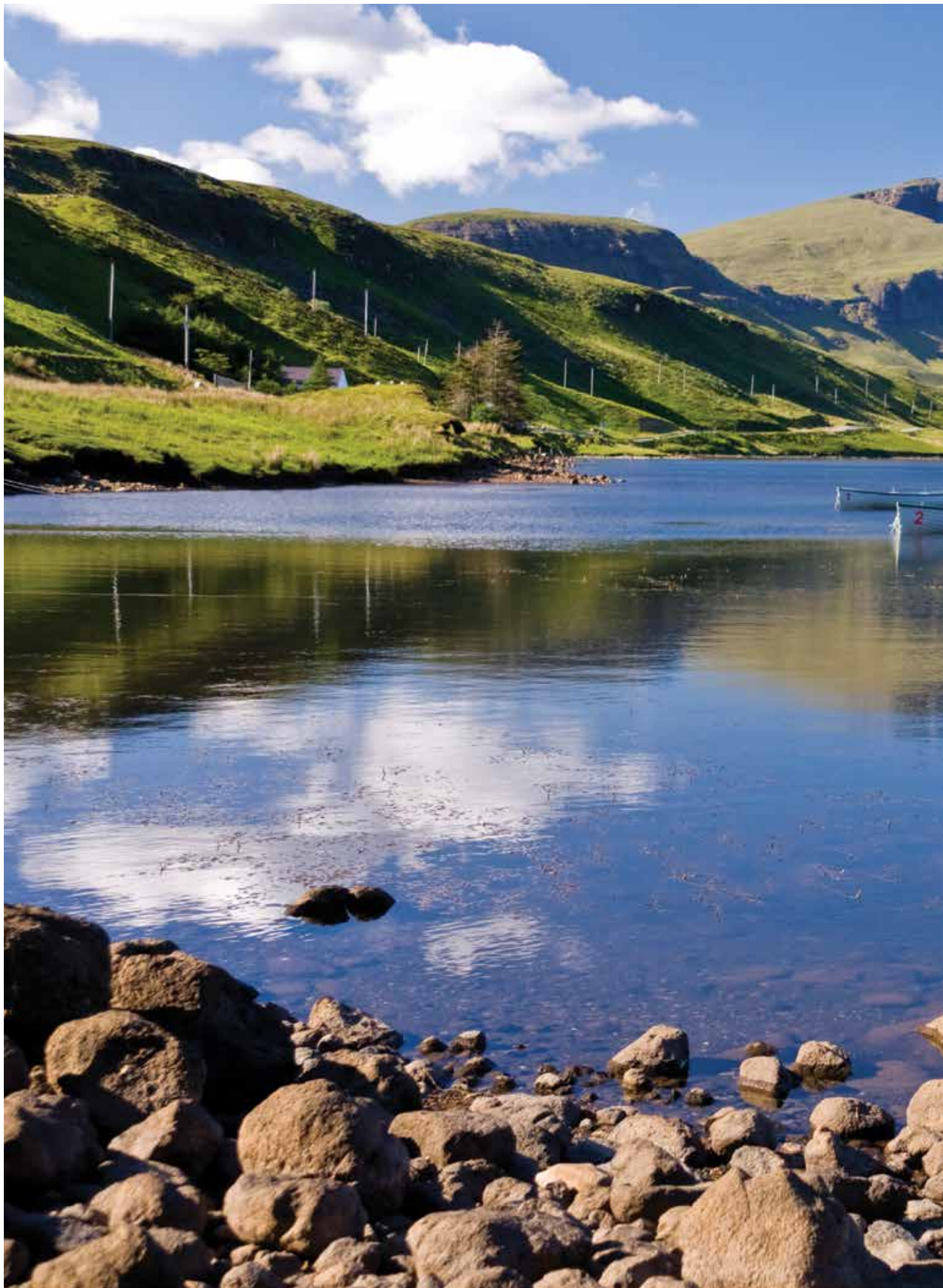
THE ROYAL COLLEGE  
OF SURGEONS OF  
EDINBURGH

# Standards informing delivery of care in rural surgery

Report of the Short-Life Working Group on Rural Surgery,  
Royal College of Surgeons of Edinburgh  
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FROM HERE, HEALTH





### **Purpose of paper**

Advances in surgery have led to increasing sub-specialisation. For urban conurbations, served by large district general hospitals or teaching hospitals, this poses little difficulty.

However, provision of elective and emergency surgical services to small communities spread over a considerable geographical area becomes more problematic.

This paper encourages the continued provision of local surgical services to rural communities at a safe and appropriate standard. The immediate context is the rural general hospital within Scotland but many of the principles may extend to the rest of the UK and beyond.



## contents

Key recommendations	01/
Foreword	02/
Introduction	03/
Standard of care	05/
Training	08/
Maintaining skills and providing support	13/
Recruitment and retention	14/
References	17/
Group members and contributors	19/
<b>Appendix A:</b> Relationship between volume and quality in general surgical practice	<b>20/</b>
<b>Appendix B:</b> Urology remote and rural training curriculum	<b>25/</b>
<b>Appendix C:</b> Trauma & orthopaedics remote and rural training curriculum	<b>30/</b>
<b>Appendix D:</b> Letter from the Royal College of Obstetricians and Gynaecologists	<b>34/</b>

## **Key recommendations** (abbreviations are given in the paper)

### **1/ If possible, services should be provided locally.**

### **2/ Surgical services in smaller hospitals must meet the same high standards of care provided in larger units**

- a. Regular multidisciplinary morbidity and mortality meetings must take place.
- b. National guidelines (SIGN in Scotland, NICE in England) should be adapted and implemented locally.
- c. Rural surgeons involved in cancer procedures must take part in regional multidisciplinary meetings and meet appropriate QPIs.
- d. Rural units must participate in national safety programmes.
- e. Rural surgeons should consider relevant publications from professional bodies when planning service provision but must be aware that these guidelines may not take issues of rurality and extremes of weather into account.
- f. Some surgical procedures will require sub-specialty skills available only in high-volume units but more common procedures may be carried out safely in smaller units with appropriate skills, appropriate case selection, and support from the relevant specialty or sub-specialty.
- g. Volume/outcome issues must be assessed in the context of the managed clinical networks as well as morbidity and mortality meetings.

### **3/ Training**

- a. Surgeons working in a remote and rural unit will require a CCT in general surgery with a mainstream sub-specialty interest.
- b. A post CCT-fellowship in remote and rural surgery (pre- or post-appointment) will allow other essential skills to be developed (e.g., emergency urology; limited range of emergency obstetrics and gynaecology).
- c. A post-CCT fellowship would also allow a senior trainee to develop a further limited specialty interest in trauma and orthopaedics or urology, and would give an opportunity for exposure to emergency otolaryngology, ophthalmology and neurosurgery.
- d. ATLS training is essential (preferably to instructor standard).
- e. The report by Professor Greenaway has many positive aspects for the training of rural general surgeons, but the criteria for credentialing procedures must be defined fully.

### **4/ Maintenance of surgical team skills requires a flexible approach**

- a. Close interaction with local consultant colleagues and visiting specialists is essential.
- b. Study leave must be adequate and funded appropriately.
- c. The range of procedures undertaken within the smaller unit is dependent on the local skills of the whole team and appropriate support from the referral unit.
- d. Specialty and sub-specialty practice can be developed only with assistance from the referral unit and from local consultant colleagues.
- e. The service must be underpinned by being able to move seriously ill patients safely without depleting the local service.
- f. Local support services should include adequate laboratory support (including out-of-hours cover) and radiology services should include CT imaging available 24 hours a day.

### **5/ Recruitment and retention**

- a. A proleptic appointment will allow suitable training before an individual takes up a post.
- b. The frequency of on-call work and the lack of opportunities for private practice should be reflected in the remuneration offered.
- c. In addition to study leave being encouraged for attendance at relevant national meetings and appropriate courses, further time must be built into the local contract for regular work at referral units to keep skills up-to-date.
- d. Provision should be made for general surgical trainees in Scotland to have the opportunity to spend 4 months in a RGH.
- e. Consideration should be given to allocating two ST national training numbers within the general surgical training programme in Scotland for trainees interested in rural surgery.

# foreword



**This report crystallises the opinion of the College's Short Life Working Group on the provision of care in rural surgery. It presents the case from the viewpoint of those currently engaged in the delivery of these surgical services in Scotland. The standards proposed are applicable well beyond this geographic boundary and are relevant to wherever surgical care needs to be delivered in a rural setting.**

This report is balanced by a sympathetic and objective view from the surgical specialties. It is quite clear that 'one size does not fit all' when it comes to service delivery in these challenging environments and that the needs and provision will vary depending upon the specialty and the region. Reducing risks to as low as possible while balancing the desire for patients to be cared for close to home is the logical aim.

The report recognises the challenge in achieving these goals and faces up to the implications for training surgeons to take up these roles, maintaining their skills and the long-term strategies in support, recruitment and retention. While the report does not and cannot produce all the answers, it provides a baseline for the urgent dialogue which needs to take place within the profession and with stakeholders in order to procure safe delivery of surgical services in the rural community for the future.

**Mr Michael Lavelle-Jones**

President, The Royal College of Surgeons of Edinburgh

# introduction

## History

Since establishment of the National Health Service (NHS) in 1948, many small hospitals reduced in status to become 'cottage hospitals' run by general practitioners (GPs), and did not provide accident and emergency (A&E) or surgical care. As transport networks improved, and new medical specialties became established, the move towards centralisation of care accelerated. Within Scotland, several small rural hospitals lost their resident surgeon (often through retirement) and could no longer provide emergency surgical cover. These included units such as Golspie, Arran, and Stranraer and, latterly, Broadford on Skye. A similar pattern was seen in England, Wales and Northern Ireland. Geographical influences have led to the maintenance of a small number of rural general hospitals (RGHs) in Scotland, serving remote populations of 20,000–30,000, and  $\geq 65$  miles (or a minimum travel time of 1.5 hours) from the nearest district general hospital (DGH).

## Current situation in Scotland

Six RGHs, defined as level 2+ units (Scottish Government, 2007), remain in the north of Scotland. Island-based units are situated at Stornoway, Kirkwall and Lerwick, whereas units on the mainland are at Wick, Fort William, and Oban. With the exception of Wick, each hospital now has a minimum of three general surgeons, and anaesthetic cover is provided by consultant anaesthetists. Consultant physicians are also based on site, and some units have local orthopaedic surgeons and obstetricians. Other elective services such as otolaryngology and ophthalmology are provided by visiting specialists. Wick now has one surgeon and NHS Highland has made provision to rotate General Surgeons from Inverness to cover lists and weekends at Caithness General Hospital.

Each hospital provides a 24-hour A&E service with a hospital doctor or a GP on site at all times. There is consultant cover from home out-of-hours. Some units have high-dependency care for surgical patients. Transfer of patients requiring intensive treatment unit (ITU) care is now provided centrally within Scotland by the Emergency Medical Retrieval Service ([www.emrs.scot.nhs.uk/](http://www.emrs.scot.nhs.uk/)). However, local consultant anaesthetists must maintain transfer skills, equipment and drugs if this service is unavailable (e.g., due to weather conditions).

RGHs have fixed arrangements with one or more DGH or teaching hospital to provide advice, specialist care, and visiting services. Within each specialty or sub-specialty, these have been termed 'obligate networks' (Scottish Government, 2007). The main referral hospital for Stornoway (Western Isles), Wick and Fort William is Raigmore Hospital in Inverness, whereas Lerwick (Shetland Isles) and Kirkwall (Orkney Islands) refer patients to Aberdeen Royal Infirmary. Oban has links with Glasgow and Inverness.

## Diversity of practice

Reviewing current practices in the Scottish RGHs has revealed considerable variation in provision of emergency and elective services, staffing arrangements, and support services.

All six RGHs deal with the type of general surgical emergencies seen in any DGH. The Belford Hospital in Fort William is situated next to two busy mountain sports centres. It deals with a considerable number of serious cases of trauma (88–130 cases per year for 1999–2002 as reported to the Scottish Trauma Audit Group, of which 15–20% per year had a severe injury severity score). All units deal with simple manipulation and plastering of common fractures or dislocations. Rural general surgeons in Orkney and Shetland undertake internal fixation of common fractures (e.g., femoral neck, bimalleolar ankle) whereas Western Isles Hospital in Stornoway has two local orthopaedic surgeons, and mainland hospitals transfer most of this type of work to larger orthopaedic units. Obstetric emergencies are covered by local obstetricians in Western Isles, Orkney and Wick; by GPs with support from rural surgeons in Shetland; and by transfer to larger units from Oban and Fort William. Gynaecological emergencies, particularly in Orkney or Shetland, often have to be dealt with by a local surgeon.

The range of elective general surgery within each unit is dictated by national policy, locally available expertise, and arrangements within the networks with larger units. Major resections for oesophageal, gastric and pancreatic cancer are not undertaken at any rural unit. Breast surgery has been centralised in RGHs where Inverness is the 'hub', whereas Orkney and Shetland retain parts of this service locally. With reductions in local urological expertise, regular visiting services are being expanded to mainland RGHs and Western Isles. Minor orthopaedic procedures are undertaken at all units by local surgeons or visiting surgeons, whereas only Western Isles offers elective joint-replacement surgery. The minimum age for general paediatric surgery is 1–5 years depending on the relevant anaesthetic policy of the RGH.

Diversity is also seen in staffing arrangements. Some units have 24-hour on-site cover from junior medical staff and associate specialist doctors. Western Isles Hospital has introduced GPs to cover A&E overnight, whereas the wards are covered by clinical support nurses. There are no senior surgical trainees providing a middle-tier on-call arrangement at any of the hospitals, and consultants provide non-residential support from home.

Maintenance and upgrading of surgical skills is achieved in various ways. Major procedures are undertaken by joint operating with two local consultants in some units. Some procedures are taught to colleagues locally and reinforced by one or more visits to the relevant specialist unit. Visiting specialists undertake major procedures assisted by or supervising the rural surgeon in several RGHs. The local surgeon can travel with his/her patient to the referral hospital if an ITU bed for the immediate postoperative period is deemed to be necessary. One surgeon has an operating list for 2 days per month in a tertiary unit to maintain skills. Other surgeons update skills by joining an 'occasional list' in a specialist unit.

All units have local support from allied health professionals such as radiographers, physiotherapists, and pharmacists. Specialist nurses (e.g., McMillan Nurses) can give appropriate support, chemotherapy and end-of-life care to cancer patients. Breast-care nurses, stoma nurses, and continence nurses are often available. Limited laboratory services run by suitably qualified technicians are backed-up from district and tertiary centres. All units now have a computed tomography (CT) scanner.



# standard of care

The standard of care in surgical units in RGHs must be identical to that provided elsewhere in Scotland. This strategy requires a whole-team approach and a decision to treat a patient locally may involve several factors: surgical experience, anaesthetic skills, high dependency unit (HDU) availability and staffing, laboratory support, and local radiological expertise. In island units, the prevailing weather conditions and potential transfer times may be additional factors. The wishes of the patient should not be overlooked; many patients prefer a local service. The Scottish Government wishes to maximise the use of services that are local, safe and sustainable (Scottish Executive, 2005).

## Meeting current standards

Morbidity and mortality meetings at local surgical units must take place regularly. The surgical unit comprises anaesthetists, junior doctors, ward pharmacists, physiotherapists, as well as nurses from the HDU, surgical ward, day surgery unit, operating theatre, A&E, and pre-assessment. All complications and deaths must be discussed with consultant surgeons and, in these small hospitals, including cases transferred to larger units can be helpful. Representatives from each part of the team must feel able to raise concerns.

The Scottish Intercollegiate Network (SIGN) publishes guidelines regularly which health boards are required by the government to examine and apply locally. These guidelines are similar to recommendations set by the National Institute of Health and Clinical Excellence (NICE) in England. Recent relevant guidelines in Scotland include: SIGN 134: Treatment of breast cancer; SIGN 126: Diagnosis and management of colorectal cancer; SIGN 122: Prevention and management of venous thromboembolism; and SIGN 111: Management of hip fracture in older people. Careful consideration must be given to application of recommendations to identify those that are essential and those that can be adapted safely in the RGH setting. Local policies and procedures should be developed in conjunction with the hub unit.

Cancer care in Scotland is organised on a regional basis. Within these regions, surgeons, oncologists, radiologists and specialist nurses for each major cancer type assemble regularly in multidisciplinary team (MDT) meetings to discuss the treatment of each patient diagnosed with cancer. Clinicians in different hospitals within the regions may videolink into these meetings, and surgeons and specialist nurses from RGHs are no exception. These meetings provide decision-making support as well as direct specialist investigation and treatment that may be available only at one centre in the region. A rural patient may be diagnosed in the RGH, have specialist investigation in a larger centre, receive neoadjuvant chemoradiotherapy and then, if appropriate, return to the RGH for surgery. Surgeons working at RGHs must participate fully in these networks.

National Quality Performance Indicators (QPIs) have been developed for several cancer types, and MDT meetings in each region play a major part in ensuring that standards are met. Rural surgeons must ensure that their patients are included in these audits, while national groups developing these standards should be careful not to put in place inappropriate barriers to local treatment. For example, SIGN 134 recommends one-stop triple assessment for all breast lumps, but local adaptation and the corresponding QPI sets the standard as triple assessment

and does not specify a one-stop clinic. Rural surgeons must continue to be involved in QPI development.

For many types of cancer requiring a multidisciplinary approach the measured outcomes from all participating units should be considered together. If the surgical results of an individual surgeon or the results from the rural unit alone are to be considered in isolation, these may need to be spread over several years to avoid one adverse result affecting the target outcome.

Provision of endoscopy services is measured against the Global Rating Scale and standards set by the Joint Advisory Group on Gastrointestinal Endoscopy. Population-screening programmes must be provided locally. Rural surgeons must ensure that they and their local units participate in bowel-screening colonoscopy by ensuring team members undertake appropriate training and audit their practice carefully.

The Scottish Patient Safety Programme (SPSP) requires health boards to monitor performance indicators in primary care and the acute sector. As well as waiting times for A&E presentations, clinic appointments, urgent referrals for suspected cancer, investigations and diagnosis-to-treatment times, such indicators include: the prevalence of staphylococcal septicaemia and infection due to *Clostridium difficile*; audit of hand hygiene; Do Not Attempt Cardiopulmonary Resuscitation documentation; compliance with guidelines for use of empirical antibiotics; prophylaxis against deep-vein thrombosis; implementation of Sepsis Six. In addition, the SPSP require hospitals to introduce a surgical pause or 'time out' (Haynes et al. 2009) and have published 30-day mortality data and results for readmission of surgical patients in Scotland from Information Services Division Scotland. Clinically relevant audits can be included in monthly morbidity and mortality meetings, but this strategy requires commitment and investment by local health boards to collect and present accurate data.

### Professional practice: RGHs and small DGHs

Surgical colleges and the Association of Surgeons of Great Britain and Ireland (ASGBI) produce relevant statements on professional practice. These statements include emergency general surgery and general paediatric surgery from the ASGBI, and emergency surgery from the Royal College of Surgeons of England. On the whole, these documents are aimed at surgical practice in larger units, particularly if elective surgery is given priority over emergency cases. Their recommendations must not be applied thoughtlessly to the RGH. Care of emergency surgical cases in RGHs compares favourably in many aspects with that in larger centres; consultant surgeons and anaesthetists in RGHs are often involved at an early stage in the 'patient journey'. Patient-centred care involves providing appropriate services locally and transfer time, for example, to a major trauma centre, specialist vascular unit, or neurosurgical services, and may lead to considerable delays, particularly for island RGHs in adverse weather conditions.

Several small DGHs throughout the UK are less geographically isolated. In these hospitals, consultant surgeons do not undertake work in other surgical specialties in their practice, but do face issues of sub-specialisation within general surgery. Much of the discussion in this document is relevant to small DGHs throughout UK and, provided appropriate support is in place, these sub-specialists may continue to practice safely. Of particular importance is full support from the referral hospital, MDT network, local hospital management, and local nursing and ancillary services. Local surgical colleagues would have to be prepared to provide emergency out-of-hours cover out-with their own sub-specialty area. For example, an upper gastrointestinal (GI) surgeon or breast surgeon would have to be prepared to cover postoperative colorectal cases at night and during the weekend.



Lerwick, Shetland: Photographer Roger Diggle

## Relationship between volume and quality in surgical practice

There is an expanding body of literature advocating centralisation of surgical services in large-volume sub-specialist units. The case is unambiguous for some general surgical procedures such as oesophagectomy and pancreaticoduodenectomy but, in other areas such as cholecystectomy and colorectal surgery, the evidence is less clear. Arguments often centre on surgical morbidity without counting the physical and financial cost to patients and relatives if they have to travel long distances for consultation and treatment. The literature also concentrates on the volume of cases undertaken by individual surgeons without taking into account the presence or absence of regional MDT support: it is well-established that anaesthetic and oncology services play a major part in overall outcome from cancer surgery. The model in RGHS in Scotland (in which a rural general surgeon operates under the guidance of a regional MDT meeting) has not been studied in detail, apart from David Sedgwick's series from Fort William in which outcomes were favourable (*this is discussed more fully and referenced in Appendix A*).

Particularly if the general surgeon is practicing in other specialty areas such as urology, orthopaedic surgery and emergency gynaecology, a close relationship must exist between the rural surgeon and specialist unit. The rural surgeon must be able to demonstrate appropriate competence in these areas to the visiting specialist or by spending time in the referral unit. In turn these specialty bodies should recognise the necessity for rural surgeons to provide an appropriately limited service within their specialty area

# training

## General surgery

The current Certificate of Completion of Training (CCT) in general surgery in UK is awarded after 2 years of core surgical training and 6 years of specialist training. Candidates complete their training with sub-specialty interest such as breast or colorectal surgery. CCT guidance can be seen at: [www.jcst.org/quality-assurance/documents/cct-guidelines/general-surgery-cct-guidelines](http://www.jcst.org/quality-assurance/documents/cct-guidelines/general-surgery-cct-guidelines), whereas the detailed curriculum is found on the Intercollegiate Surgical Curriculum Programme (ISCP) website ([www.iscp.ac.uk](http://www.iscp.ac.uk)).

A CCT in general surgery with a 'mainstream' sub-specialty interest (colorectal or upper GI) would be the essential basic component for training in remote and rural surgery. It also has the advantage that a surgeon, once appointed to a RGH, would not have to remain in a rural unit for the rest of his/her career.

Trainees who express an early interest in remote and rural surgery could spend part of their core training in emergency medicine, orthopaedics and trauma, urology, or cardiothoracic surgery. During specialist training (ST) years 3–6, time spent in breast, vascular and paediatric surgery would be helpful. After the CCT, the surgeon would spend 1–2 years in a remote and rural training fellowship in which interests could be developed further by 6-month attachments in specialties such as urology and trauma and orthopaedics, and shorter attachments to gain experience in emergency obstetrics and gynaecology, otolaryngology, ophthalmology, and neurosurgery. An attachment to one or more of the rural surgical units would also be beneficial.



## Post-CCT

A proleptic appointment upon CCT completion would be of considerable benefit for ‘tailoring’ training in remote and rural surgery to the type of surgery likely to be undertaken in a specific RGH. It would also allow most of the fellowship to be undertaken at the relevant referral hospital. There is provision for proleptic appointments for small sub-specialties within the NHS that have been used for remote and rural surgery in the past. There is central funding for a 1-year post-CCT fellowship in remote and rural surgery that could be allocated for a proleptic appointment.

An individual training programme would be designed by the North of Scotland Deanery to suit the needs of the appointee and the needs of the rural unit. If required, the programme could include urology or orthopaedics in some detail (as outlined below). In addition to familiarising the appointee with common emergencies in A&E and surgical specialties, straightforward elective procedures could be credentialed specifically.

## Urology

Traditionally, urology makes up one-third of general surgical practice, so the remote and rural surgeon will see a considerable number of urological emergencies. Competence in the diagnosis and management of an obstructed kidney or urological trauma is essential and, unfortunately, general surgical trainees have ever-decreasing exposure during their training. In particular, scrotal surgery and acute testicular torsion are moving into the realm of the urologist in the UK.

Involvement of rural surgeons in elective urology varies considerably with RGHs. Training a general surgical CCT-holder even to the end of ST3 level during a 6-month attachment would be challenging particularly if the individual had no previous urological experience. Considerable knowledge would need to be gained, and progress monitored, perhaps based around problem-based assessments or short essays on basic urological topics set by the trainer. A limited number of procedures such as flexible cystoscopy and transrectal ultrasound (TRUS) and biopsy could be indexed or specific competency-based assessment could be undertaken. A modified version of the Annual Review of Competence Progression (ARCP) at the end of 6 months would give assurance to the trainee and trainer.

### **Candidates undertaking this type of attachment would have to:**

- show commitment and enthusiasm to practice urology
- undertake a full 6-month programme devoted entirely to urology (without other on-call commitments)
- take part in on-call urology rotas
- attend urology MDTs and have study leave to attend relevant events on urology
- accompany urologists on visits to RGHs.

Training units would have to be fully committed to training a RGH surgeon in an appropriate range of skills and to fully supporting his/her future practice in the RGH.

The British Association of Urological Surgeons has been approached and a response is awaited. Development of a suitable curriculum would be helpful. A fuller discussion is available in *Appendix B*.

## Trauma and orthopaedics

As noted above, the proportion of surgical patients presenting to a RGH with trauma or orthopaedic conditions is variable and is based on the location and local facilities. However, emergency work alone makes up a considerable proportion of the overall surgical workload of a rural surgical unit. The rural surgeon is usually responsible for all trauma cases presenting to the Emergency Department, may treat simple injuries (including straightforward manipulations of fractures or dislocations) and is often involved in referral or follow-up of cases in a local fracture clinic. One RGH has a GP with a special interest running the fracture clinic. Another unit has a locally based orthopaedic service involved in emergency and elective work, whereas the other hospitals rely on a visiting service, mainly for clinics and minor lists. Minor elective orthopaedics could be carried out by the local surgeon.

An Acute Trauma Life Support (ATLS) certificate is a requirement of a CCT in general surgery. Qualification as an ATLS instructor would be desirable for all remote and rural surgeons to maintain adequate skills in the remote setting, and would offer the opportunity of regular contact with other physicians involved in immediate trauma care.

During a 6-month attachment to an orthopaedic unit, a rural surgical fellow with a CCT in general surgery would be expected to attend morning radiology meetings every day, take part in fracture clinics regularly, undertake plastering and simple manipulations, and assist in the trauma operating theatre. A formal assessment of knowledge to a standard expected of an orthopaedic trainee may not be appropriate, but credentialing of certain procedures could be undertaken. This strategy would depend on the aptitude and enthusiasm of the rural fellow, but could include manipulation of a dislocated total hip replacement, repair of extensor tendons, open reduction and internal fixation of an unstable ankle fracture, and hemiarthroplasty or a dynamic hip screw for a fractured neck of the femur. Minor orthopaedic procedures could also be considered (e.g., surgery to treat carpal tunnel syndrome).

A post-CCT placement should take place in the referral unit to ensure enthusiasm on the part of the trainers as well as the trainee, and to firmly establish long-term professional relationships within the network.

Further discussion and recommendations can be found in Appendix C, and include consideration of the role of the GP with a special interest as well as the rural trauma and orthopaedic consultant.

## Obstetrics and gynaecology

There are several models for the provision of obstetrics and gynaecology at RGHs. Some have their own local specialists providing emergency cover; others have GP input for obstetric services with general surgeons available for caesarean sections and other emergencies; and some have midwife-led obstetric units only. Unless there is an obstetrician and gynaecologist available on site 24 hours a day 7 days a week, the rural general surgeon may be involved in the surgical management of obstetric emergencies as well as emergency gynaecology.

High-quality obstetric and gynaecological services are best undertaken by specialists in this area, but the Royal College of Obstetricians and Gynaecologists (RCOG) recognise the challenges posed by the geography of Scotland and other areas of the UK. The RCOG also recognises that no one solution will fit all problems in terms of the rural unit concerned and the individual training for (or appointed to) that unit. A syllabus for a select number of

emergency procedures could be 'tailored' to the requirements of the trainee/appointee, while recognising the individual would have insufficient time to attain full decision-making skills. Once in post, such an individual would need to continue to liaise with the GP covering the maternity unit, or with the on-call gynaecology team at the referral hospital, as part of the decision-making process.

The RCOG also emphasise the importance of maintenance of skills, with close links established between the referral hospital and rural unit, dedicated study leave for the surgeon, regular visits by the surgeon to the referral unit, and visits by supervising obstetricians and gynaecologists to the RGH. The formal response from the RCOG is shown in *Appendix D*.

## Otolaryngology

Rural general surgeons, especially those on islands, must deal with ear, nose and throat (ENT) emergencies on a fairly regular basis. Most of these are not life-threatening, but a small number are. There is likely to be little place for elective work because otolaryngologists visit all the smaller units, but familiarity with a small number of ENT emergencies is essential. Training in these areas and credentialing of a small number of procedures would be possible. Such procedures would include (in adults and children) tracheostomy (including mini-tracheostomy), acute tonsillitis and peri-tonsillar abscesses, control of post-tonsillar bleeding, recognition of major neck sepsis, management of epistaxis, and removal of foreign bodies. One-month attachment during post-fellowship training may achieve this aim, but there could be flexibility beyond this period. As in other specialty areas, training within the referral unit is essential, coupled with commitment on the part of the trainers and trainee.

## Ophthalmology

As outlined in more detail on the website of the Joint Committee on Surgical Training, training should include causes and presentation of foreign bodies of the eye, dendritic ulcers, flash burns and other causes of 'red eye' (including glaucoma). Practical skills should include slit-lamp examination and removal of foreign bodies from the cornea. A formal response is awaited from the Royal College of Ophthalmologists Curriculum Committee. One-month attachment in ophthalmology with set learning outcomes is envisaged.

## Neurosurgery

All rural units see patients in A&E with head injuries, and a proportion of these require observation for 24 hours in the RGH. A small number will require more active resuscitation and CT and, rarely, in the more remote units, an emergency craniotomy will be appropriate to evacuate an extradural haematoma.

All trainees should be familiar with the initial management of head injuries, including anatomy, pathophysiology, clinical assessment, and appropriate investigation. For those likely to practice in island RGHs, a short attachment in the relevant referral neurosurgical unit to ensure an appropriate knowledge base and to become familiar with emergency craniotomy would be appropriate.

There is local agreement for this arrangement within the North of Scotland, but formal approval from the Specialty Training Committee for neurosurgery in Scotland is awaited.

## Maxillofacial surgery

The national picture archiving and communication system (PACS) allows ready transfer of images for review by the on-call maxillofacial surgeon at the referral unit, and advice can be given over the telephone. Dental abscesses are more commonly dealt with by a local on-call dental service but patients may be admitted to the rural unit for administration of antibiotics via the intravenous route and airway monitoring, and looked after jointly by the surgeon and local dentist, with advice from the referral maxillofacial unit.

An A&E attachment is envisaged to be an essential part of rural fellowship training and, during this period, trainees will be exposed to common facial injuries necessitating maxillofacial input. Dental abscesses will also be seen and other opportunities (e.g., reduction of a dislocated mandible) should be facilitated.

## Implications of the Greenaway Report

The major thrust of this document looking at the shape of future training in the UK (Greenaway, 2013) is to ensure a broader-based training for physicians in all specialties up to the award of a CST 4–6 years after a 2-year foundation programme. Thus, 6–8 years after graduation, a physician will be trained to work in the “general area of his/her specialty”. Special interest and sub-specialty areas may be enhanced thereafter by formal quality-assured training programmes leading to credentialing in that area.

A broader-based training with avoidance of sub-specialisation early on in training could be very positive for rural surgical training. Some cross-specialty competences could be gained at an earlier stage in training. However, the trainee must develop at least one sub-specialty interest post-CST in addition to the competencies required for rural general surgery.

Discussions on the report are underway and the final outcomes are far from certain. In particular, criteria for credentialing have not been established in this report.





# maintaining skills & providing support

## Surgical skills

It is a requirement in the UK for all medical practitioners to have a yearly appraisal and undergo revalidation every 5 years. This process helps the rural surgeon to reflect on areas of practice where skills are more difficult to maintain or where additional support and supervision is needed in what can be an isolated and exposed situation. Working well together with consultant colleagues is essential. Skills may be maintained and enhanced in several ways, as listed below.

- › Joint ward rounds with surgical colleagues and junior colleagues.
- › Joint operating with two rural consultants for more major cases.
- › Supervised operating whereby one rural surgeon passes on skills to another in minor procedures.
- › Assisting or being supervised by visiting specialists or sub-specialists at major procedures in the rural unit.
- › Travelling with an elective patient to operate in the referral centre where the patient, for example, might require postoperative intensive care.
- › Undertaking lists supervised or unsupervised in a specialist centre or referral unit.
- › Attending national and international specialty and sub-specialty meetings.
- › Attending relevant courses provided by the Colleges or national skills centres.
- › Spending longer periods of time in the referral unit or an appropriate centre.

It has been recognised for some years that the rural surgeon will need extended study leave and a matching budget to maintain the broad range of skills required.

This document does not detail which procedures can and cannot be carried out in a rural unit. This has been attempted elsewhere ([www.nospgh.nhsscotland.com/index.php/remote-rural-healthcare/rr-implementation-group-rrig/care-pathways](http://www.nospgh.nhsscotland.com/index.php/remote-rural-healthcare/rr-implementation-group-rrig/care-pathways)) but will change because new standards will apply, new methods will be developed, and personnel, with differing skill mixes, will change posts. Thus, a surgeon with an interest in colorectal or breast surgery may extend practice at a rural unit and the lower age limit for operating may change according to the anaesthetic experience available. For example, tonsillectomies have been introduced by a suitably experienced rural surgeon with support from the referral unit to help maintain paediatric anaesthetic and nursing skills in the local team.

A rural surgeon may take a lead role in a sub-specialty or practice in other specialties. However, this cannot be done in isolation from other consultant colleagues, who must be willing to assist in the operating theatre for major cases and deal appropriately with complications or emergencies arising within the sub-specialty practice if their colleague is not available.

## Newly qualified trainees

A newly qualified consultant appointed to a remote and rural post will face additional challenges related to the wide variety of skills required and relatively low numbers of specific cases. An older surgeon who has done many procedures within one sub-specialty will 'de-skill' considerably more slowly than a young surgeon who has much less surgical experience in that area. The support outlined above becomes imperative for a young rural surgeon.

A local senior colleague and a senior consultant from the referring unit should be designated 'mentors' upon appointment. A joint appointment period with a considerable time commitment to working at the referral hospital for the first few years may be appropriate.

## Expanding roles for allied health professionals

Advanced nurse practitioners (ANPs) are undertaking various clinical roles in the UK: seeing and treating minor medical and surgical problems in the A&E Department; running follow-up clinics for breast cancer and colorectal cancer; undertaking endoscopy of the upper and lower GI tract. Physician associates have also been introduced in some sub-specialty areas. Most of these practitioners work in very specific areas with supervision from a consultant readily available on site, so have a limited role working with unselected patients across several specialties (especially if on-site supervision is not available). However, several roles have been developed in RGHs, and it may be possible to expand them in the future, as listed below.

- Macmillan Nurses have crucial roles in working with cancer patients and in palliative care at home or in hospital.
- Nurses are seeing and treating minor injuries and illness in the A&E Department. This strategy has been very successful in larger units. However, in the RGH, this role must be confined to only two or three full-time nurses to ensure there is a sufficient volume of common problems to maintain the skill and confidence required to see, treat and discharge patients.
- Midwives have practiced independently for many years, but a midwife-led unit in a rural location must be very selective, and numbers of deliveries may be low. In larger RGH units, the extended role of the midwife allows an obstetrician or GP to be on-call from home. In the latter case, the surgeon is called if a caesarean section is required.
- Midwives have expanded their roles in early loss of a pregnancy. A protocol-led service is in place in Shetland for medical management of missed or incomplete abortion by midwives, who carry out ultrasonography and prescribe medications, and involve the surgeon only if surgical evacuation of retained products is required.
- ANPs have been used successfully in Western Isles Hospital to cover the surgical ward with a consultant surgeon on-call from home. GPs are on shift overnight in the A&E Department simultaneously. Hence, trainee doctors need not be involved in covering the hospital and A&E Department at night, but this is an expensive system.
- Further expansion of this system for mainland RGHs has been discussed with a view to avoiding a consultant surgeon having to be on-call at night. GPs would transfer rather than admit patients, and the ANP could transfer deteriorating patients on the surgical ward. This was felt to be untenable in Fort William Hospital in particular, where there are a considerable number of patients who have suffered serious trauma out of hours.

## Patient transfer

To provide a comprehensive elective and emergency service, safe and appropriate transfer arrangements for seriously ill patients must be in place. This system used to be provided

mainly by the local anaesthetist having to travel off the island with a seriously ill or intubated patient, but Scotland is now fortunate in having a consultant-led retrieval service for adults and children. The Emergency Medical Retrieval Service based in Paisley became part of the national adult, paediatric, and neonatal specialist transport service (ScotSTAR) in 2014. Two fixed-wing aircraft are available round the clock, and Royal Air Force or coastguard helicopters can be used in all but the most severe weather conditions.

## Support services

Radiological services remain essential to support elective and emergency surgery. Development of a national digital-imaging service in Scotland with easy access 24 hours a day 7 days a week has been of considerable benefit to rural units and larger hospitals. An emergency ultrasound service has proved difficult to provide in RGHs because there is usually only one or two locally based personnel with appropriate skills. A CT scanner has become essential in recent years, and all units now have a scanner. Local radiographers may need training, as a minimum, to undertake CT of the head out of hours. Reporting by a radiologist can be done remotely (ideally in the referral hospital) but could also be provided by a consortium of locum radiologists familiar with the unit (Western Isles Hospital) or by contracting services to other parts of the world, particularly out of hours. There is some variation between units in the provision of a visiting radiologist, but once a month would be seen as a minimum to provide barium screening and support to local radiographers and sonographers. Emergency interventional radiology will not be available.

Laboratory services are provided locally by biomedical scientists supported by clinicians in supporting units. Limited out-of-hours cover is available at each unit and varies between units. A minimum should include urea and electrolytes, liver function test, C-reactive protein, glucose, amylase, troponin, full blood count, coagulation, crossmatch/issue of blood components, as well as microscopy for cerebrospinal fluid and joint aspirates.

## Use of technology: present and future perspectives

The national PACS system allows images taken in one unit in Scotland to be uploaded to a national server and seen by any other unit in Scotland while maintaining the original quality. This strategy has made a huge difference to emergency orthopaedic services whereby the referral unit can view images and then discuss management by telephone. Emergency and elective CT imaging is carried out with the radiologist organising the scan and reading the results remotely.

Elective services have also benefited from improved videolink technology. Increasingly, MDTs use videolinks regionally and nationally. A clinic consultation with an oncologist may take place by videolink with the help of a specialist nurse. A hoarseness clinic is undertaken in Shetland using a video laryngoscope so that the images are seen in real time by an otolaryngologist in Aberdeen.

There has been less success in other areas for RGHs. A videolink facility to a consultant in A&E medicine may be useful to support offshore paramedics, but has been less helpful in inter-consultant discussion between the rural unit and referral hospital. A recent regional pilot study allowing videolinking to a consultant paediatrician has not been found to be helpful to RGHs where direct contact with the referral unit is well established.

Laparoscopic surgery in particular may lend itself to remote supervision in the future by 'telementoring' (Antoniou et al. 2012) but is not used in rural units in Scotland.

# recruitment & retention

In September 2012, there were 143 vacant consultant jobs across all specialties in Scotland; by September 2015 this had risen to 345 (Source: Scottish Workforce Information Standard System, Information Services Division (M) 36.) Appointments outside Scotland's central belt are considered remote, and private practice is limited. In addition, numbers of training grade doctors are leaving the UK, some of whom never return. Although on-call work may not be as busy as in a larger centre, most rural general surgeons are on-call 1 in 3 during the working week and 1 in 4 weekends, often with prospective cover. This contrasts with larger units where on-call may be 1 in 4 or more, and the surgeon is not required to continue elective sessions while on-call. These factors make recruitment to a rural position even more challenging.

Consultant posts advertised as 10 PAs can be renegotiated on appointment. Remuneration should reflect the frequency of the on call commitment.

In addition to study leave being encouraged for attendance at relevant national meetings and appropriate courses, further time must be built into the local contract for regular work at referral units to keep skills up-to-date. An honorary consultant appointment at the referral unit in one or more surgical specialty or sub-specialty would be essential. Development of a further specialty or sub-specialty interest should be made available (if appropriate) by a 6-month attachment to a relevant unit.

Many UK-trained doctors are attracted to Australasia because of the lifestyle and a proportion of physicians do not return to the UK. More senior physicians do not wish to move to remote areas because of family ties and difficulties in obtaining a job for a partner. Advertising the lifestyle advantages to potential recruits as early as medical school, and targeting young physicians who come from remote communities, may provide some hope for filling these posts in the longer term. Surgical trainees who express an interest in rural surgery should be mentored closely and encouraged. A 4- or 6-month rotation to a rural surgical unit should be offered to all general surgical trainees in Scotland.

Two ST national training numbers could be allocated to trainees interested in rural general surgery within the general surgical training programme in Scotland. This approach has not met with long-term success previously, but trainees and trainers need to be made aware that rural surgery is an attractive and viable career choice, and that it has full support from the Royal College of Surgeons of Edinburgh.

## Bibliography

Antoniou, S. A., Antoniou, G. A., Franzen, J., Bollmann, S, Koch, O.O., Pointner, R., & Granderath, F. A. (2012). A comprehensive review of telementoring applications in laparoscopic general surgery. *Surgical Endoscopy* 26(8), 2111–2116.

Greenaway, D. (2013).

Shape of Training Final Report. Securing the future of excellent patient care.

**Available at:** [www.shapeoftraining.co.uk/reviewsofar/1788.asp](http://www.shapeoftraining.co.uk/reviewsofar/1788.asp).

Accessed 28 November 2015.

Haynes, A. B., Weiser, T. G., Berry, W. R., Lipsitz, S. R., Breizat, A. H., Dellinger, E.P., Herbosa, T., Joseph, S., Kibatala, P. L., Lapitan, M. C., Merry, A. F., Moorthy, K., Reznick, R. K., Taylor, B., Gawande, A. A. & Safe Surgery Saves Lives Study Group. (2009).

A surgical safety checklist to reduce morbidity and mortality in a global population.

*New England Journal of Medicine* 360(5), 491–499.

Scottish Executive. (2005). Delivering for health.

**Available at:** [www.gov.scot/resource/doc/76169/0018996.pdf](http://www.gov.scot/resource/doc/76169/0018996.pdf).

Scottish Government. (30 November 2007). Delivering for remote and rural healthcare.

Final report of the remote and rural workstream.

**Available at:** [www.gov.scot/resource/doc/222087/0059735.pdf](http://www.gov.scot/resource/doc/222087/0059735.pdf).

Accessed 28 November 2015.

Gilbert Bain Hospital / photographer Roger Diggle



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# Appendices

### Relationship between volume and quality in general surgical practice

D Sedgwick

**Over the past two decades, there has been a trend towards ‘super-specialisation’ and centralisation of services in general surgical training and practice. This trend has been driven by several factors, as outlined below.**

- 1/ Increasing complexity of certain procedures requiring skills to be centred in teams based in a smaller number of units.
- 2/ Reports of increasing volume of cases leading to alleged increasing quality of care of patients.
- 3/ The European Working Time Directive (EWTD) with more surgeons needed to fulfil on-call cover in smaller units with the consequent reduced number of major cases per surgeon.
- 4/ Another consequence of the EWTD is reduced training time for general surgical trainees, which reduces the wider experience necessary for practice in RGHs.

**In the past year, there has been some evidence of possible challenges to this trend, as outlined below.**

- 1/ Publication of a report by Professor Greenaway, which states that the medical workforce must adapt to the changing needs of patients. In particular, this change requires more physicians capable of providing general care for patients in broader general disciplines and in a range of settings. This report recommends that postgraduate training must adapt to prepare medical graduates to deliver this type of care. One result of this strategy is that trainees will require opportunities to ‘credential’ for certain common procedures in different specialties. (Greenaway, 2013)
- 2/ The need for generalists has also been recognised by the former chief medical officer of Scotland, Sir Harry Burns, as quoted in a *British Medical Journal* careers article (Rimmer, 2014) and in an interview published in the *Glasgow Herald* in January 2014. (Puttick, 2014)
- 3/ There has also been support from The Academy of the Royal Colleges in their response to the report by Professor Greenaway, which in principle supports changes to training to provide generalists in the surgical specialities with credentialing of certain procedures in other specialties. (Academy of Medical Royal Colleges, 2013)

However, these views do not address one of the underlying criticisms of the general surgeon working in an RGH that serves a small population and who, therefore, will have a small number of cases in any given specialty.

**Health boards require guidance in provision of safe and sustainable services, and the Royal Colleges will need to provide guidance on such questions as:**

- 1/ How many procedures does a surgeon need to carry out to remain competent?
- 2/ What mechanisms can be set in place to assess this competency (e.g., joint operating and travelling to a central super-specialist unit to operate)?
- 3/ Is ‘importing patients’ from an adjacent conurbation and/or ‘exporting’ the skills of the surgeon to another unit to keep numbers of procedures at an acceptable level a solution?
- 4/ How to challenge the increasing power of the specialty groups which are fragmenting general surgery, bearing in mind that there have been significant changes made by these groups?



There is fairly convincing evidence that for complex procedures such as oesophago-gastrectomy, pancreatectomy, and hepatectomy, centralisation of this type of surgery is advantageous. However, for other procedures such as colectomy, hernia repair, appendicectomy, as well as laparoscopic and open cholecystectomy, there is less convincing evidence. Several studies illustrate this difference.

In 1999, a study of eight common procedures was carried out to ascertain if there was a relationship between surgical volume and outcome. Procedures included partial colectomy, as well as open or laparoscopic cholecystectomy. The other procedures reviewed were cardiothoracic or specialist vascular procedures, which would not be carried out in an RGH. Volumes were divided into quartiles of procedures per annum ranging 0–6 up to 16–39 for open cholecystectomy; 0–9 to 20–44 for laparoscopic cholecystectomy, and 0–12 to 31–52 for partial colectomy. Of the 68,631 procedures reviewed, there was no difference in risk-adjusted 30-day mortality between low- and high-volume units. (Khuri et al. 1999)

The influence of hospital volume on three factors (30-day mortality, overall survival, cancer-specific survival) was examined in a study involving 27,986 patients under SEER Medicare in the USA between 1992 and 1996. Quartiles of hospital volume were 'low' (1–57), 'medium' (58–112), 'high' (113–165) and 'very high' (166–383) resections per annum. A significant difference between 30-day mortality for very-high-volume units (3.5%) compared with those of low-volume units (5.5%) was noted. The authors suggested that low-volume hospitals based in metropolitan areas should consider referring patients to a local high-volume unit, whereas those in the more rural populations should look at overall care, surgical method and team approach to care to see if improvements in these parameters may improve outcomes, and keep patients in local units. The small benefits of improved outcome against the difficulties arising from transfer need to be discussed by the medical community and general community. (Schrag et al. 2000)

A study by Birkmeyer et al. examined the effect of volume on the 5-year survival of six cancer types: lung, oesophageal, gastric, pancreatic, bladder, and colon. A total of 64,007 patients in Medicare units across the USA were studied. Biggest differences between low- and high-volume units were reported for oesophageal surgery (17%), whereas the difference for colon cancer was low (3%). The other four cancer types had differences of 4–6%. The association between hospital volume and long-term survival was weaker for colonic cancer than for the other cancer types. Factors affecting the differences could not be identified, but suggestions varied from surgical expertise to postoperative care and intensity of long-term follow-up with use of adjuvant chemotherapy. The authors suggested strategies to improve care in all hospitals should be paramount, even in low-volume units. (Birkmeyer et al. 2007)

A further study compared non-specialist with specialist colo-proctologists undertaking emergency and elective colorectal surgery using risk-adjusted scoring systems. Overall mortality was lower for specialist colo-proctologists, but it was not possible to say that it was better than for non-specialists because, when correction using the risk-adjusted scoring system was done, emergency patients presenting to non-specialists were at a higher risk. An error in the results reported in the study was highlighted by McFarlane and accepted, but invalidated some of the conclusions of this investigation. (Leung et al. 2011; Mcfarlane, 2011)

Grant and Sedgwick reported a 10-year series of patients with colorectal cancer presenting to an RGH. They stated that there are conflicting reports on the relationship between surgeon workload and outcomes of procedures for colorectal cancer. A large difference was noted between the prevalence of anastomotic leaks and recurrence between individual surgeons that was independent of surgical volume. This phenomenon was shown in two important studies by Phillips et al. when looking at the performances of 94 consultant surgeons from around the UK. (Phillips et al. 1984 and 1984) In addition, McArdle & Hole found that outcome after colorectal surgery was significantly different between 13 consultants even after accounting for patient-related variables. (McArdle & Hole, 1991) Also, Meagher showed that, after reviewing figures from Australian surgeons, there was a strong suggestion that the individual surgeon is an important prognostic factor in the treatment of colorectal disease. (Meagher, 1999) However, when looking for evidence to link workload with outcomes, the impact is not as clear. Carter wrote that “there is an abundance of evidence that hospitals with high volume tend to have better outcomes”. (Carter, 2003) However, this statement was based on several studies focusing on variable data such as medical admissions and patients undergoing prostatectomy. Only one of the studies linked to this statement focused on colorectal disease and it dealt solely with surgery against rectal cancer. Other evidence in favour of high-volume workload improving outcomes is limited. (Urbach et al. 2003; Finks et al. 2002)

There is evidence against the argument that high volume improves outcome. As pointed out by Steele, it is important to compare ‘like with like’ and to distinguish between individual and institutional volume, (Steele, 1999) which is not done clearly in many studies. Interestingly, Kee et al. in a study from Northern Ireland, found that surgeons with a colorectal volume >33 cases per year had worse survival data compared with surgeons with low volumes. In addition, McArdle and Hole found no convincing evidence that volume affects outcome. (Kee et al. 1999; McArdle & Hole, 2004) and concluded that, when analysing outcome data after 3200 colorectal cancer procedures, outcome was influenced by specialisation but not by volume. (McArdle & Hole, 1991) Despite this evidence, surgical volume is often considered as being the most important single variable affecting outcome. It may be that volume is the easiest variable to measure directly. The findings of that study mirror the good results published from rural settings in the USA and Australia. (Callaghan, 1990; Birks et al. 2001) Those studies hypothesize that even complicated procedures against colorectal cancer can be carried out efficiently in rural hospitals. Chowdhury et al (Chowdhury et al. 2007) stated that ‘high volume equates to good outcome’ based on an extensive meta-analysis. However, that study excluded figures from single centres or individual surgeons, and did not recognise the difficulties involved in publishing small-volume results. These two features introduce a strong bias towards high-volume practice. In addition, if their generalised conclusions are broken down to look at surgery for colorectal cancer, there were only five studies, of which two looked specifically at rectal cancers. One finds no influence of volume and the other defined low volume as less than 5 procedures per year. This observation suggests that the volume–outcome relationship in resection for colonic cancer is not clear. (Grant & Sedgwick, 2011)

The discussion above continues to highlight the difficulties in trying to answer questions about the volume of surgical procedures. Numbers of procedures have been assigned for adequate training for award of a CCT, (Joint Committee on Surgical Training, 2014) but the numbers of procedures in articles and reports (if assigned) are not referenced clearly. This paper is not advocating that small-volume surgery in more complex procedures should be adopted but that the more common sub-specialist procedures can be carried out by a well-trained general surgeon working in a team within a managed clinical network. This point was emphasized by Watters and Knight commenting on a series of endoscopic retrograde cholangiopancreatography procedures in a small-volume unit (75/year) in rural Australia with

two main provisos: participation in audit as well as peer review from, and participation in, continuing medical education in the larger/tertiary centre. (Watters & Knight , 2008)

To enable general surgical services in RGHs to be sustained it is imperative that there is relaxation of the 'protectionist' demands of the 'super-specialists' to allow/credential the general surgeon working in an RGH to carry out certain procedures. If this policy is not implemented then the entire service will collapse, with increased ambulance requirements for transfer to larger centres that will increase further congestion in such units.

### **We have the following recommendations and comments:**

- 1/** Training in high-volume units is essential to acquire requisite skills.
- 2/** Participation in appropriate MDTs based in tertiary units for discussion of management of cancer and more complex cases.
- 3/** Careful prospective audit with regular morbidity and mortality reviews with larger units.
- 4/** Joint operating within RGHs and with colleagues from tertiary centres.
- 5/** Team approach to care of more complex patients.

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### **Bibliography**

Academy of Medical Royal Colleges. (28 October 2013). Shape of Training Report: Academy statement. **Available at:** [www.aomrc.org.uk/doc\\_view/9724-academy-response-to-shape-of-training-report](http://www.aomrc.org.uk/doc_view/9724-academy-response-to-shape-of-training-report). Accessed 28 November 2015.

Birkmeyer, J. D., Sun, Y., & Stukel, T. A. (2007). Hospital volume and late survival after cancer surgery. *Annals of Surgery* 245(5), 777–783.

Birks, D. M., Gunn, I. F., Birks, R. G., & Strasser, R. P. (2001). Colorectal surgery in rural Australia: SCARS; a surgeon based audit of workload and standards. *Australia and New Zealand Journal of Surgery* 71(3), 154–158.

Callaghan, J. (1990). Colorectal cancer in a small rural hospital. *American Journal of Surgery* 159(3), 277–280.

Carter, D. (2003). The surgeon as a risk factor. *British Medical Journal* 326(7394), 832–833.

Chowdhury, M. M., Dagash, H., & Pierro, A. (2007). A systematic review of the impact of volume of surgery and specialisation on patient outcome. *British Journal of Surgery* 94(2), 145–161.

Finks, J. F., Osborne, N., & Birkmeyer, J. D. (2002). Hospital volume and surgical mortality in the United States. *New England Journal of Medicine* 346(15), 1128–1137.

Grant, A., & Sedgwick, D. M. (2011). Small can be beautiful: 10 years managing colorectal cancer in a rural general hospital. *Scottish Medical Journal* 56(1), 26–29.

Puttick, H. (23 January 2014). Health chief calls for reform of training given to doctors. *Herald Scotland*. **Available at:** [www.heraldscotland.com/news/health/health-chief-calls-for-reform-of-training-given-to-doctors.23251914](http://www.heraldscotland.com/news/health/health-chief-calls-for-reform-of-training-given-to-doctors.23251914). Accessed 28 November 2015.

Joint Committee on Surgical Training (July 2014). Guidelines for the award of a CCT in general surgery. **Available at:** [www.jcst.org/quality-assurance/certification-guidelines](http://www.jcst.org/quality-assurance/certification-guidelines). Accessed 28 November 2015.

Kee, F., Wilson, R. H., Harper, C., Patterson, C. C., McCallion, K., Houston, R. F., Moorehead, R. J., Sloan, J. M., Rowlands, B. J. (1999). Influence of hospital and clinician workload on survival from colorectal cancer: cohort study. *British Medical Journal* 318 (7199), 1381–1386.

Khuri, S. F., Daley, J., Henderson, W., Hur, K., Hossain, M., Soybel, D., Kizer, K. W., Aust, J. B., Bell, R. H. Jr., Chong, V., Demakis, J., Fabri, P. J., Gibbs, J. O., Grover, F., Hammermeister, K., McDonald, G., Passaro, E. Jr., Phillips, L., Scamman, F., Spencer, J., & Stremple, J. F. (1999). Relation of surgical volume to outcome in eight common operations results from the VA National Surgical Quality Improvement Program. *Annals of Surgery* 230(3), 414–429.

Leung, E., Ferjani, A. M., Kitchen, A., Griffin, D., Stellard, N., & Wong, L. S. (2011). Risk-adjusted scoring systems can predict surgeons' performance in colorectal surgery. *The Surgeon* 9(1), 3–7.

McArdle, C. S., & Hole, D. (1991). Impact of variability among surgeons on post-operative morbidity and mortality and ultimate survival. *British Medical Journal* 302(6791), 1501–1505.

McArdle, C. S., & Hole, D. J. (2004). Influence of volume and specialization on survival following surgery for colorectal cancer. *British Journal of Surgery* 91(5), 610–617.

McFarlane, G. A. (2011). Letter. *The Surgeon* 9(5), 292.

Meagher, A. P. (1999). Colorectal cancer: is the surgeon a prognostic factor? A systematic review. *Medical Journal of Australia* 171(6), 308–310.

Phillips, R. K., Hittinger, R., Blesovsky, L., Fry, J. S., & Fielding, L. P. (1984). Local recurrence following 'curative' surgery for large bowel cancer: I. The overall picture. *British Journal of Surgery* 71(1), 12–16.

Phillips, R. K., Hittinger, R., Blesovsky, L., Fry, J. S., & Fielding, L. P. (1984). Local recurrence following 'curative' surgery for large bowel cancer: II. The rectum and rectosigmoid. *British Journal of Surgery* 71(1), 17–20.

Rimmer, A. (29 January 2014). College backs call for training reform from Scotland's chief medical officer. *British Medical Journal Careers*. **Available at:** <http://careers.bmj.com/careers/advice/view-article.html?id=20016224>. Accessed 28 November 2015.

Schrag, D., Cramer, L. D., Bach, P. B., Cohen, A. M., Warren, J. L., & Begg, C. B. (2000). Influence of hospital procedure volume on outcomes following surgery for colon cancer. *Journal of the American Medical Association* 284(23), 3028–3035.

Steele, R. J. (1999). The influence of surgeon case volume on outcome in site-specific colorectal cancer: cohort study. *British Medical Journal* 318, 1381–1386.

Urbach, D. R., Bell, C. M., & Austin, P. C. (2003). Differences in operative mortality between high and low volume hospitals in Ontario for 5 major surgical procedures: estimating the number of lives potentially saved through regionalisation. *Canadian Medical Association Journal* 168(11), 1409–1414.

Watters, D., & Knight, R. R. (2008). Isolated specialists: how many procedures do they need to carry out and how do we measure whether they are competent? *Australia and New Zealand Journal of Surgery* 78(9), 731–732.

## Appendix B

### Urology remote and rural training curriculum

**Steve Bramwell** - former Consultant Urologist, Raigmore Hospital, Inverness  
Meeting of the Royal College of Surgeons of Edinburgh Working Group,  
Wednesday 7 May 2014

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#### Introduction

The report by the Scottish Government on delivering for remote and rural healthcare in 2007 makes little reference to urology save to indicate several index procedures – mainly inguinoscrotal but with some basic cystoscopy – which the surgeon should be able to undertake.

Traditionally, urology cases accounted for one-third of general surgical practice. It follows that the remote and rural general surgeon will have to deal with a considerable number of common urological emergencies, and to stabilise the much less common urological injuries before transfer to the DGH or, in extremely (fortunately) rare cases, undertake emergency surgery (e.g., nephrectomy during lifesaving laparotomy for trauma).

There is no question that competence and training in urological emergency care is required for remote and rural surgical practice.

Elective work in urology is a completely different matter and is being seen increasingly as optional, with recent suggestions that experience in scrotal procedures should no longer be part of the general surgical curriculum.

Current practice in Highland RGHs varies hugely. Some surgeons with a special interest in urology run clinics and undertake investigations and a wide range of urological surgery with teams trained support this workload locally. They work alongside their colleagues in the DGH, participate in MDTs, and are an integral part of the visiting urology team. These surgeons are acquiring and maintaining competence in urology to a high standard, and their practice stands out as an excellent example upon which to model standards of sub-specialty care in RGHs.

In other units, there are surgeons with less interest or experience in Urology and different models of urology service provision have been developed to supply the demand for care according to these factors. In general, a visiting consultant urologist runs clinics, undertakes minor operations, and arranges for transfer of all other cases to the DGH for advanced surgical care.

With the aging population, the demand for urology services has grown almost exponentially. We can offer much more in terms of assessment and treatment across the wide range of urology with its own sub-specialties. Hence, it has become increasingly difficult for any single urologist (let alone a RGH surgeon) to keep up-to-date with current knowledge and practice. Urology has become highly sub-specialised to the extent that in England, for example, even large DGHs have been stopped from carrying out what used to be regarded as basic cancer surgery, and such cases are now transferred to high-volume cancer centres on the basis that this strategy should improve outcomes.

With radical changes in, for example, treatment of obstruction of the prostate gland, the number of transurethral resection of the prostate (TURP) procedures carried out in urology units has plummeted. Hence, obtaining sufficient cases to gain competence can take almost the entire training period for an ST in urology to achieve. Other common procedures (e.g., ureteroscopy, laser surgery for stone removal) are expensive, and require advanced

endoscopic skills rarely attainable with the small caseload of stones through a RGH. Hence, these patients are perforce dealt with in the 'hub' urology unit.

It is against this background that we must assess what (if any) role the remote and rural surgeon can and should have in urological care, and to establish a baseline of how to achieve minimum validated competence across a range of appropriate urological activities. It is not within the scope of this report to consider how more advanced skills can be obtained maintained and reaccredited periodically (though this also represents a growing challenge).

I have been asked to consider three questions.

### **Question 1**

#### **Can we use the ISCP competences for ST3 entry as a benchmark for RGH practice? How should 'sign off' be done at the end of 6 months?**

Entry into urology ST is at ST3 and follows completion of core surgical training (CT)2 or certified equivalent training. General competencies are the same for all surgical specialties, so the candidate is accredited as trained to that level in basic routine and emergency care. All must have the Member of the Royal College of Surgeons (MRCS) award at the time of interview. To be accepted for urology ST3,  $\geq 6$  months in urology during CT is required, but there are no prescribed competencies relating to the specialty.

During ST3, the trainee is given grounding in general urology and expected to acquire knowledge of the specialty by participating in supervised operating lists, diagnostic clinics (haematuria, flexible cystoscopy), TRUS/biopsy of the prostate gland, and urodynamics. Trainees participate in the general care of elective and emergency urological cases.

During this time they would expect to progress to minor inguinoscrotal and cystoscopic cases, to assist at more complex sub-specialty surgery, and to start resection in TURP and transurethral resection of bladder tumours.

Competence to progress to ST4 is judged through ISCP documentation and scrutiny of the logbook at the ARCP. As trainers we understand that trainees progress at different rates – some are gifted technically at open surgery, whereas others are more skilful at endoscopic procedures. This disparity justifies the concept of competence-based progression.

In other cases (e.g., TURP), the caseload in a DGH is not large and training opportunities can be limited. The remote and rural trainee would be competing with the urological trainee for such cases.

It follows that some (but not all) procedures may be signed off as 'trained' early but, in my experience, it is common for trainees to take a few years to progress to competence even in some minor procedures.

### **Conclusions**

- 1/** Trainee surgeons in a RGH considering practicing urology should have the 6-month CT experience required for ST3 entry to urology on which they can build. It is unlikely that anyone would be interested in this specialty without prior exposure at this level. To achieve 'something from nothing' in 6 months is unrealistic.
- 2/** A successful ARCP after a 6-month attachment to a urology unit is unlikely to equate to competence across the full range of the urological training offered at ST3 level (certainly not in TUR). However, provided the training numbers are of sufficient intensity, competence could be gained in inguinoscrotal procedures, flexible cystoscopy and TRUS/biopsy of the prostate gland.

- 3/** For remote and rural trainees, the ARCP would need to be tailored to meet reasonable expectations from a 6-month attachment. The ARCP should include additional information perhaps based on assignments that show knowledge of general urology, and a realistic idea of how trainees would envisage the practice of urology within a RGH. The panel would ideally include a rural general surgeon practicing urology.

## Question 2

### **Should knowledge at least be broader to cover several other topics to an appropriate level as detailed in the ST3–ST6 section of the urology syllabus?**

The sub-specialties of urology are: oncology (usually split between upper tract and pelvic, each being sub-specialised); endourology (including stone surgery and laparoscopy); female (incorporating neurourology and urodynamics); andrology (with a separate sub-specialty in urethral surgery). Core (general) urology practice encompasses all of these topics at a less specialised level (though most urologists in DGHs have a sub-specialist interest).

The standard for accreditation in general urology is the Fellow of the Royal College of Surgeons (FRCS) in urology in the UK and the Fellow of the European Board (FEBU) in Europe. These are exit qualifications signifying knowledge to the level of a first-year consultant urologist. The examinations are sat from ST6 onwards.

It is desirable for the RGH trainee to have extended knowledge of sub-specialties to be able to communicate accurately with patients and colleagues in a 6-month attachment to any urology department. However, limited (but relevant) exposure to some (but not all) sub-specialties is the rule. This knowledge is gained from interacting with all members of the urology team, including specialist nurses, specialist clinics, operating lists and, perhaps most importantly, the MDT.

Relevant study leave (e.g., attending the Scottish Urology Society and annual meeting of the British Association of Urological Surgeons) should be mandatory.

How this knowledge might be tested is another matter. The ISCP should document a broad range of topics on project-based assessments, and other assignments might include clinical audit and short essays on basic urological topics set by the trainer or training programme director.

## Conclusion

- 1/** A broad knowledge of general urology includes basic understanding of the sub-specialties that comprise general urology. The importance of acquiring basic knowledge and of keeping up-to-date in this rapidly changing specialty cannot be overemphasised and is a lifelong process. During the 6-month attachment, time must be spent in reading and demonstrating this knowledge. The ISCP should be supplemented by specific assignments designed to demonstrate insight in urology and its practice in a RGH and, if adopted, these should be considered at the ARCP.

### Question 3

#### Is ST3 competence achievable in 6 months?

Undoubtedly most good, motivated trainees could aim for this goal. However, competence at ST3 would not equate to sufficient progress in training to undertake surgery unsupervised in an RGH unless deemed so at the ARCP. The conditions that favour success are listed below.

- 1/** Commitment by the trainee to practice urology! This statement may seem obvious, but personal experience shows that motivation among general surgical trainees moving to remote and rural surgery varies enormously. Selection for sub-specialisation outwith general surgery needs to be done carefully. Units are more motivated to train excellent, enthusiastic candidates and are put-off training commitments if they encounter apathy.
- 2/** The urology attachment, for whatever length, must not include being on-call for general surgery – it should be devoted entirely to the urology attachment. Protected time-off after busy general surgical on-call deprives the trainee of precious training time. Remote and rural trainees are often experienced and are targeted for extra general-surgical duties (particularly on-call) but this must be resisted. They should not assume that their skills will atrophy if they are not doing general-surgical duties constantly!
- 3/** The training urology unit must be committed to training their future RGH colleagues, and be prepared to encourage them to acquire a wide range of skills. This is especially true for the more experienced trainees, who are likely to have good endoscopic skills and who can progress rapidly.
- 4/** Remote and rural trainees should take part in on-call urology emergency rotas to gain experience in common emergencies.
- 5/** Attendance at MDTs as well as protected study time and leave should be planned and executed.
- 6/** Trainees should accompany the visiting urologist on trips to RGHs to facilitate and build networks as well as to gain a realistic idea of how to develop their practice in urology.



## Summary

The aim to see, investigate, and treat as many patients as close to their place of residence are wholly admirable goals for remote and rural surgeons. However, the increasing complexity of the sub-specialty work that forms the core of urological practice represents an increasing challenge and risk for the RGH team to deliver.

There has been a trend among general surgeons in RGHs to reduce their involvement in urological care beyond providing emergency stabilisation and transfer. Reasons for this trend include the awareness that working beyond competence in a complex specialty (or indeed any situation) is fraught with potential problems. Getting it 'wrong' may have been acceptable in previous times when access to a specialist was difficult (or sometimes impossible) but, with modern transport and communications, and taking into account patient expectations and medicolegal considerations, there is understandable reluctance in the RGH to undertake duties that have not been trained for if an reasonable alternative exists.

Similarly, surgeons undertaking long (and sometimes busy) on-call commitments may not desire to commit to the extra workload required of urological practice if they know that the work can be done by a visiting specialist, or if the patient can be transferred to a urology unit.

Alternatives (e.g., the patient travelling a long distance for specialist expertise, or increasing the number of specialist visits to the RGH) must be provided in the target-driven NHS if RGH staff cannot do so. Some may argue that direct specialist care is now the 'gold standard' against which the performance of the local team will be measured.

In seeking to nurture the urological skills of selected RGH surgeons, it is vital to equip them with core skills that permit safe practice, to ensure that those skills are maintained, and to ensure that there is close cooperation over cases between the RGH and DGH hub in the ways outlined elsewhere in this paper. Establishing a core curriculum that is agreed nationally is the first, vital step towards this goal.

Maintaining skills and sharing responsibilities within a tightly controlled, supportive, managed clinical network and what that involves should allow the motivated surgeon and surgical team in a RGH to preserve a range of safe elective and emergency urology. This range, however, may be very much reduced in the future, yet continue to benefit a considerable number of local people.

When the decision is taken to reduce the breadth of urological work undertaken locally, skills within the whole team atrophy quickly and may be lost permanently. Hence, there is some urgency to replace retiring surgeons with surgeons who have been trained in urology, and to support their efforts to preserve and develop urology team skills.

## Bibliography

Scottish Government. (30 November 2007). Delivering for remote and rural healthcare. Final report of the remote and rural workstream.

**Available at:** [www.gov.scot/resource/doc/222087/0059735.pdf](http://www.gov.scot/resource/doc/222087/0059735.pdf).

Accessed 28 November 2015.

### Trauma & orthopaedics remote and rural training curriculum

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Royal College of Surgeons of Edinburgh Working Group  
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#### Introduction

The report by the Scottish Government on delivering for remote and rural healthcare in 2007 makes limited reference to trauma & orthopaedics (T&O), though Appendix X reproduces the documents from the T&O Orthopaedic Competency Assessment Project. Much of the detail in the formal T&O curriculum and syllabus will have little relevance to the general surgeon intending to undertake some T&O activity in the remote and rural setting.

This paper will consider the problem first from the viewpoint of the surgeon generalist (Shetland model), the GP with a special interest (Wick and Skye) and then finally consider the T&O specialist in a remote location.

#### General surgeon/surgeon generalist

The report by the Scottish Government on delivering for remote and rural healthcare in 2007 made it clear that basic trauma skills would be essential for remote appointments for the surgeon generalist. What was not discussed is that including musculoskeletal trauma in the remit of the general surgeon could increase the work available to enhance the interest of the post and to make such posts more viable.

Previous generations of surgeons gained some experience of T&O during basic surgical rotations and the then mandatory exposure to 6-months of A&E before the old-style FRCS. Though CT in the rest of the UK may include time in T&O, run-through training in T&O (now unique to Scotland) precludes those in CT posts from T&O. Formal training in emergency medicine now excludes those in surgical training, and exposure will be gained only through stand-alone posts (probably before starting speciality training). Against these deficiencies is the fact that general surgery and T&O require current ATLS skills at least to provider status for the CCT.

The basic need for surgical skills in remote areas is to deal with life-threatening emergencies. Few T&O emergencies are life-threatening, but they may be limb-threatening. For those that are not, there remains a need to ensure safe initial management of fractures and dislocations and open wounds of the extremities. ATLS skills give at least the basis for the surgeon generalist to manage such injuries.

Thus, ATLS is mandatory and, in the opinion of this author, should be to instructor status to offer the rural surgeon the opportunity to maintain skills that may not be used frequently.

**Recommendation 1:** ATLS instructor status (preferably with a 6-month attachment in emergency medicine)

Major trauma presenting to RGHs is perhaps the least contentious issue. There is broad agreement that such patients should be cared for in major trauma centres even within urban settings, and so may bypass geographically closer hospitals even for initial management. For those not cared for initially in a trauma centre, the principle is 'stabilisation and transfer'. Scottish retrieval services now provide prompt transfer with the only difference in RGHs being

that transfer may be delayed for reasons of weather, time or distance. It is axiomatic that such transfer should occur between units that are in regular contact and with clear lines of communication.

After treatment of such injuries, it is preferable for follow-up to be close to the patient's home. This goal can be achieved by the local surgeon and/or by a visiting specialist. Therefore, if visiting arrangements exist, transfer should be to the base of such specialists to facilitate communication and future follow-up (e.g., Shetland–Aberdeen, Fort William–Inverness).

Management of single-limb injuries involves the reduction and stabilisation of fractures and dislocations. Therefore, the rural surgeon must be able to make an accurate clinical assessment and interpret radiographs appropriately to be able to diagnose such injuries. These skills can be gained only by spending training time in a T&O unit. It is unlikely that these skills could be acquired with an attachment lasting <6 months. Such attachments are most likely to be of value if done in units that participate regularly in caring for patients referred from RGHs so that the decision-making around initial management and transfer protocols can be understood (e.g. Raigmore, Inverness or Aberdeen Royal Infirmary).

**Recommendation 2:** Transfer of patients from RGHs should be done between units that are in regular contact and by direct communication between consultants. This is most likely to occur between units that have a visiting specialist service.

Local management of single-limb injuries range from management of simple fractures as an outpatient to surgical treatment of specific injuries (e.g., hip fractures: Shetland; ankle fractures: Falkland Islands). Such fracture surgery, however, has developed via custom and practice rather than planning, and requires explicit guidelines as well as clear lines of supervision and accountability.

**Recommendation 3:** General surgeons expecting to undertake T&O must have a ≥6-month attachment to an appropriate T&O unit that has experience of caring or remote and rural patients.

It is unlikely that the general surgeon will be able to offer significant elective orthopaedic surgery. Orthopaedic surgery sub-specialises in the same way as general surgery. Volume–outcome relationships are not absolute but the 'occasional operator' is unlikely to obtain comparable surgical outcomes to that obtained by a specialist. Nonetheless, many procedures in all surgical specialities are done appropriately and successfully by surgeons in training. The principle of procedure-based assessments used for speciality trainees can be used to credential specific procedures for individual surgeons (e.g., treatment of carpal tunnel syndrome in Fort William Hospital). This principle requires a sponsor specialist surgeon to undertake the credentialing and to act as a guarantor for the activity of the remote and rural surgeon.

**Recommendation 4:** Elective surgery by a remote and rural general surgeon must be done only after credentialing and under the governance of the surgeon responsible for credentialing. Such a specialist advisor should be in the unit to which the RGH makes its elective referrals.

## GP with a special interest

General practice contributes to three main models in the management of T&O in RGHs: fracture clinic (Wick), rural practitioners (Skye) and Emergency Department cover (Stornoway). As with general surgery, these models have developed as a function of the local interest and skills available, and with local staffing arrangements rather than as a result of formal planning.

GPs may have had trauma training via the British Association for Immediate Care but, if working in an Emergency Department, having at least ATLS-provider status would be appropriate.

Existing arrangements have developed due to historical quirks, but training a cohort of GPs in the Skye model would seem to offer the best chance of creating a sustainable and predictable contribution from general practice. Also, there is limited evidence that recruitment of GP trainees in this region might be improving.

**Recommendation 5:** The Skye model of a rural practitioner with extended skills in emergency medicine should be adopted to create a sustainable cohort of rural GPs. Training and continuing education should include ATLS, advanced airway skills, and regular attachments to a T&O department involved in caring for remote and rural patients.

**The R&R specialist T&O surgeon:** The primary role of the remote and rural T&O surgeon will be to manage trauma. Major trauma will be stabilised and transferred, whereas single-extremity trauma will be managed locally. However, with the exception of Fort William Hospital (which is relatively near its major referral centre), trauma numbers in RGHs are low and there may be issues of skill maintenance.

**Recommendation 6:** The remote and rural T&O surgeon must have ATLS-provider status and, for the reasons offered for the general surgeon, instructor status is desirable. Participation in national audits (e.g., audit of hip fractures) should be mandatory.

Even the specialist T&O surgeon in a remote location will not have the resources available to provide definitive treatment to patients with multiple injuries that may involve systems other than the musculoskeletal system. As noted above, there is a precedent for the transfer of such patients to a major trauma centre in Scotland (Elgin to Aberdeen & Inverness) and now in England with inception of the trauma plan recommended by Professor Willett. The role of the T&O surgeon in the remote unit will be to stabilise and transfer. It would be expected, however, that the receiving unit would delegate more follow-up to the T&O surgeon than might be expected if the source of referral was the surgeon generalist. Such transfers must be managed by clear protocols (*as indicated in Recommendation 2*).

It is not yet clear how the announcement of four trauma centres for Scotland might alter existing relationships for RGHs. It is likely that these plans relate more to transfer from DGHs (e.g., Lanarkshire) than to consideration of geography and timescales of transfer from remote units because the latter have transfer protocols.

**Recommendation 7:** The specialist T&O surgeon in a RGH must have a clearly defined pathway for referral of major trauma cases to a unit that deals regularly with such referrals.

The specialist T&O surgeon in the RGH would expect (and be expected) to provide an elective surgical service. Minor and intermediate surgery which, in general, is done on a day-case basis, would include hand surgery, foot surgery and arthroscopic surgery (though there might be limitations on availability of equipment for low numbers of procedures). Procedures at this level, however, can be carried out by visiting specialists (Shetland, Falklands, Golspie).

Primary joint replacement would also be expected and can be done with limited equipment. Though not done presently by visiting specialists, primary joint replacement could be carried out by them given the appropriate operating-room facilities and the willingness of general surgical colleagues to assist with aftercare.

The major problem with providing specialist T&O surgeons to RGHs is that, pending the outcomes of The Shape of Training, most UK and European Union trainees expect to gain CCT with sub-speciality expertise though, unlike general surgery, this does not form the basis of a sub-speciality FRCS.

Sub-speciality practice, however, requires first an adequate population base to maintain numbers, and this is unlikely to be available in existing RGHs in Scotland. Without such a population base, there is a risk of the sub-specialist exceeding expected norms for intervention (as happened historically with arthroscopy in the Western Isles). Such practice in isolation without regular departmental peer-review has been recognised to lead to performance issues.

The second problem is that of equipment. For example, revision joint replacement requires extensive kit often (even in large units) provided on a loan basis. Such kit loans are expensive, bedevilled with logistical problems, and fraught with dangers if used by the 'occasional' team. In addition, the lack of a bone bank limits the type of revision surgery that may be considered.

Remote and rural surgeons may be able to maintain skills in a major unit (as has happened with general surgery) but this seems unpredictable with manifest problems of accountability (particularly with difficulties with regard to follow-up).

The problem for the patient is that with T&O surgeons in the RGH, the entire spectrum of contemporary orthopaedics will not be catered for. There will, therefore, be a need for peripheral clinics from major centres or for patients to travel for sub-speciality expertise.

**Recommendation 8:** Elective T&O surgery in the RGH may be done by visiting specialists or in-house T&O surgeons.

**Recommendation 9:** Elective T&O surgery in the RGH should be restricted to minor and intermediate procedures (done usually as day cases) and to primary joint replacement.

**Recommendation 10:** Elective T&O surgery in the RGH should be included in regional/national audits such as the Scottish Arthroplasty Project.

**Recommendation 11:** Sub-speciality surgery such as revision joint replacement should be referred to a major unit that is likely to be dealing with such cases more frequently and to have the requisite expertise and equipment.

In providing high-quality obstetric and gynaecology services, the RCOG strongly support specialist obstetricians and gynaecologists undertaking this work. However, we are aware that there can be challenging issues providing this in various geographical locations in Scotland and other areas of the UK. It is, therefore, difficult to develop a 'standard' model of care in light of the multiple variables around the extremely small maternity unit. We support the work that you are pursuing to address developing standards but would suggest that 'bespoke' solutions will be required depending upon the medical specialists employed in posts and the competencies of other members of the workforce which, for maternity, would include midwives.

We have not described a preferred model of care for maternity units of this size. However, there will be a compromise in standards if they are not staffed by obstetricians and gynaecologists. Reducing these risks to as low as possible is the aim, as well as balancing the desire of women to be cared for close to home and the need to access specialist advice and management.

We recognise that, in some rural areas, consultant surgeons provide emergency care and, due to their surgical skills, they undertake specific emergencies related to obstetrics and gynaecology. In considering your draft paper, we would ask you to consider two areas, as outlined below.

**1/ Training of individuals who plan to work in remote and rural areas.**

We would suggest that this will require multidisciplinary targeted post-CCT (of surgical trainees) and should be service-directed (and perhaps funded). The RCOG could describe a syllabus for a select set of emergency procedures that could be compressed into a shortened timeframe. However, it would not be realistic to expect such an individual to attain the experience required for decision-making skills in obstetrics and gynaecology within such a shortened timeframe. This issue is particularly important because the governance around decision-making must be clear to protect patients and individuals. This issue causes some concern, and we would advise that, as part of any locally developed standard, clear pathways of care must be made explicit.

**2/ Maintenance of skills in those already in post.**

We support a robust, individualised job-appraisal system that identifies the ongoing requirements to ensure individuals keep up-to-date and have sufficient experience of any of the procedures within obstetrics and gynaecology. To this end, additional study leave may be required as well as funding. We would envisage that the 'ideal' system would be a 'buddying' system with a reasonably local specialist in obstetrics and gynaecology. Time spent within the Obstetrics and Gynaecology Department undertaking elective procedures on a routine basis, as part of a standard job plan, would be essential. Consideration should be given to local specialists in obstetrics and gynaecology attending the remote and rural setting to observe practice, provide advice regarding service delivery, and deliver training to all members of the team in contemporary practices.

We would be keen to contribute to the working group and to be kept informed of proposals that you develop because these may be applicable to other areas of the UK.

Yours sincerely

**Dr Clare McKenzie** FRCOG

Vice President, Education



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Each hospital provides a 24-hour A&E service with a junior doctor or GP on site at all times. There is consultant cover from home out-of-hours. Some units have high-dependency care for surgical patients.



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