Remote and Rural Healthcare in Scotland

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The health of rural people remains a global challenge for the developed and developing world. In many poor countries, access to clean water and food by rural populations remains a basic challenge to health. While HIV, TB, Malaria, road trauma and warfare challenge rural health in developing countries, developed countries are challenged by equity of access to sophisticated healthcare.

Historical Background

There are many geographical and sociological definitions of remoteness and rurality based upon sparseness and size of communities. In Scotland, islands, mountains and historical National Health Service provision complicate definitions for NHS Scotland, and pragmatic definitions for analysis of health service provision are best analysed on the basis of "drive time" to a core facility such as a Consultant-led A&E unit or a general practitioner.[1] Thus Stornoway, in the Western Isles, becomes rural whereas Applecross, on the mainland, becomes remote.

The Royal College of Physicians of Edinburgh carried out an early investigation into the deficiencies of medical provision in the Highlands and Islands in 1851, and found that only 62 of 170 parishes had a resident doctor and that 41 parishes could be "regarded as destitute of medical aid".[2] Scotland then provided the world's first analysis of health provision in rural communities with Sir John Dewar's Government report in 1912.[3] The analysis and recommendations of this Edwardian report remain just as pertinent to the current debates in providing healthcare to Scotland's rural communities. Dewar's principle recommendations included better training for rural doctors, better use of transport and technology, and guaranteed minimal levels of service provision for rural populations, despite geography.

Following Dewar's recommendations, the Highlands & Islands medical service was established in 1923 with Government-funded GPs in rural communities and a network of community hospitals This rural health innovation provided an example for subsequent planning of the NHS in 1948. The current redesign of medical services by NHS Scotland is complicated by historical service provision, increased community expectations and a different rural economy with improved transport infrastructure. For example, Orkney & Shetland hospitals have never had Consultant-led maternity services in contrast to Wick hospital, where the community are campaigning to retain such a service.

Current Problems

The current problems for healthcare provision to remote and rural Scotland include recruitment and retention as well as increasing specialisation across the professions. Local rural services require multi-competent generalists for service delivery, but urban secondary (hospital) care medical postgraduate training programmes have no recognisable specialism in generalism. Increasing medical specialisation, the European Working Time Directive (EWTD) and reduced training time have threatened the organisation of rural healthcare in Scotland. Concerns about professional isolation and on-call rotas have made single-handed medical practice unsustainable.

Close scrutiny of quality standards raises questions about the number of procedures required for skill maintenance and medico-legal risks for infrequent emergency procedures in rural locations, such as emergency caesarean sections. Compliance with national guidelines may be difficult without access to sophisticated investigations within an emergency timeframe.

International Perspective

The Australian and Canadian general practitioners have led the world in defining rural practice and the training needed for it through the WONCA (World Organisation of National Colleges, Academies and Academic

Associations of GP/ Family Physicians) Working Party on Rural Practice.[4] The Working Party has written guidelines and policy statements by means of international conferences, followed by telephone conferencing. A global network of rural family doctors has supported colleagues in developing and developed countries to engage with their communities and governments in the organisation of rural healthcare.

Undergraduate medical education in Australia and Canada now has an evidence base to prove that rural undergraduate medical education can achieve better outcomes than parallel urban streams. Enhanced professional identity for rural practitioners and undergraduate exposure have enhanced recruitment and retention.[5] In Canada and Australia, secondary care provision is sustained by GPs with extended skills in such areas as caesarean sections and anaesthesia. Training and re-accreditation infrastructures address the skill maintenance issues. In Norway and Sweden, telemedicine and a well-organised transport infrastructure, including fast boats, support rural healthcare.

Remote and rural healthcare has become an academic subject with an international electronic journal and Scotland has the Centre for Rural Health.[6,7]

Scottish Solutions

In Scotland, managed clinical networks, medical and communications technology and the rural general hospital concept provide hope for future provision of healthcare in remote and rural Scotland.

Managed Clinical Networks and Medical Education

In managed clinical networks, local general surgeons work within agreed protocol levels with specialists, and skill retention is ensured by joint operating sessions between the rural generalist and specialist. Regular maintenance of clinical fire drills with courses such as ATLS, BASICS and ALSO, ensure that local professionals called to infrequent emergencies do not lose their confidence or skills.[8-10]

Technology

Tele-radiology and tele-histopathology can facilitate case conferences for complex case management between a local rural general hospital and a super-specialist unit. Screening for emergency conditions in rural populations, such as aortic aneurysm, has been shown to save lives and prevent sudden organisational panic by planned elective procedures.[11] A neonatal audio screening pilot programme has used technology to pick up neonatal deafness in rural populations with few babies in which to maintain the skill of health visitors.[12] Community first responder defibrillation teams and rural GPs attending road accidents help maintain emergency response times. Paramedic pre-hospital thrombolysis supported by telelinks to coronary care, is already reducing emergency call to needle (treatment) times.

Rural General Hospital and Generalism

The rural general hospitals (RGHs) of Shetland, Orkney, Stornoway, Fort William, Oban and Elgin have similar problems in maintaining consultant-led services in the face of increasing specialisation and the EWTD. The Scottish health service should define the core emergency provision required of these hospitals and then organise training, quality standards and managed clinical networks around this framework. The lesson from Australia is that RGHs are a valuable educational resource in a health system as they promote the concept of generalism. Indeed, we are realising that large urban super-specialist hospitals increasingly require medical generalism, for example in admission units. The RGH concept as the local delivery unit for agreed care by consultants to local rural populations requires more support from the Royal Colleges. The educational opportunities for undergraduates and postgraduates go beyond technical procedures and allow the observation of a whole system of health care for an individual patient. The whole picture of care is more easily visible in the rural context. The view from the foot of the medical mountain or out from the island community can enrich young medical minds and clarify thought for urban survival.

Remote and Rural Hospital Care in Scotland

Problems:

Increasing medical specialisation

Patient access to emergency services

Local requirement for medical generalists

European Working Time Directive

Skill-mix & retention with small numbers of procedures

Solutions:

Rural general hospital concept

Rural-specific generalist training and accreditation

Peer-constructed managed clinical networks for rural consultants

Improved communications technology

Conclusion

Scottish islands and mountains will always pose difficulty for the delivery of healthcare, but the lesson of history is that doing so can be a source of innovation in technology, professional team working and education, which can benefit urban health care while solving the geographical challenge. The political devolution of health care planning to Scotland has so far made only limited use of our remote and rural health assets by viewing them as a problem before thinking of them as part of a wider solution.

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