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PERSONAL VIEW

Trend towards centralisation of hospital services, and its effect on access to care for rural and remote communities in the UK

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A B S T R A C T

There are trends towards centralising hospital care within the NHS, for many excellent reasons. Yet this has a disproportionate impact upon those patients who live at a distance from their hospital, and this impact has not been well reported or researched, but studies have demonstrated that the utilisation of services is inversely related to the distance of the patient from the hospital; so-called 'distance decay'. This article examines the trend and describes the reasons for it, and the impact on those living in remote and rural communities. It argues that health service planning needs to be patient centred, and points out that, although providing services to rural communities is more expensive than that for urban populations, a balance needs to be struck between cost-effectiveness and the provision of accessible and equitable services for all of our patients. It argues for a debate to help define where that balance point should be, and makes certain recommendations. This debate is especially important, because the professions urgently need to decide how to respond to the UK Department of Health document 'Keeping the NHS Local - a new direction of travel'.

Key words: access to care, centralisation, UK.

Introduction

There are trends towards centralising hospital care within the NHS, for many excellent reasons. Yet this has a disproportionate impact upon those patients who live at a distance from their hospital, and this impact has not been

well reported or researched, but studies have demonstrated that the utilisation of services is inversely related to the distance of the patient from the hospital; so-called 'distance decay'.

This article examines the trend and describes the reasons for it, and the impact on those living in remote and rural communities. It argues that health service planning needs to be patient centred, and points out that, although providing services to rural communities is more expensive than that for urban populations, a balance needs to be struck between cost effectiveness and the provision of accessible and equitable services for all of our patients.

It argues for a debate to help define where that balance point should be, and makes certain recommendations. This debate is especially important, because the professions urgently need to decide how to respond to the Department of Health document 'Keeping the NHS Local- a new direction of travel'[1].

Why are we tending to centralise hospital services?

The costs of health service infrastructure and equipment are high, and with each technological advance, are likely to grow. Training and maintenance of skills is more easily accomplished where there is a high exposure to relevant cases. Recent legislation, such as the European working time directive[2], means that more staff are needed to man a unit continuously, and rotas are easier to arrange in large establishments. The shortage of trained manpower within the NHS probably exacerbates this trend.

There are clear and welcome trends towards the development of teams across disciplines, and these, similarly, are easier to arrange in larger establishments. Large units achieve economies of scale, and can make most efficient use of a scarce resource; but in this context, we need to recognise that some of the costs are in fact passed to the patients, especially those living at a distance; and a review by York University in 1997 suggests that there was no evidence that cost savings are necessarily made by increasing hospital size above approximately 200 beds[3].

There is an ever increasing degree of specialisation within hospital medicine

There is a trend within medicine, in part related to this centralisation, to increase the degree of specialisation, and this no doubt adds to the need to centralise. Little seems to have been published about this increasing specialisation, and no Department of Health statistics show this clear trend. Yet it is common for surgeons to concentrate on one particular area, such as breast disease, laparoscopic surgery or bowel surgery, when previous generations saw these dealt with by the general surgeon. Within orthopaedic surgery, it is common for surgeons to concentrate on one particular joint; and there are similar examples throughout hospital medicine, as well as encouragement for some GPs to develop particular specialist skills.

Research shows that there are better outcomes for patients under the care of more specialist professionals, for example for cancer survival[4], and for those involved in serious accidents[5]. As health services increasingly measure and publicise outcomes, so such trends will inevitably grow.

What is the impact of these trends on remote and rural communities?

There is an impact on access to care; services are taken up less often or later. This impact is disproportionately felt by those with low incomes, poor access to transport, and the elderly and disabled.

Haynes and Bentham have demonstrated in a study in Norfolk that the number of visits to inpatients decreases with increasing distance from the patients home to hospital[6]. McKee et al showed that the distance of the patient from the

casualty department was a major factor in lowering utilisation rates[7]. A study in Trent looked at inequalities in access to coronary angiography and revascularisation, and showed that practices over 20 km from the centre had significantly lower rates of both[8]. Rural patients in the UK have been found to be more likely to have advanced diabetic retinopathy than urban patients[9]. A study in Scotland documented higher mortality from asthma in more rural areas which also had lower hospital admission rates[10].

Trauma deaths are known to be higher in more rural areas, and especially are higher if there is no major accident and emergency (A&E) department in the district. 'Dead on arrival' rates vary between 23% and 74%, the lowest in a metropolitan area and the highest in a rural town[5]. Ian Watt[11], and Rousseau and colleagues[12] have reviewed some of the relevant literature.

Rousseau and colleagues have commented:

> *The trend towards centralisation of trauma services pays too much attention to the advantages of centralisation and not enough to the extent to which delays in reaching hospital care contribute to preventable deaths. More research is needed into the wide variation in dead on arrival statistics seen in different hospitals,* ***and in the extent to which delays in reaching hospital contribute to preventable deaths.***[12]

This effect has been called *distance decay*, and it can lead to poorer health outcomes for remote patients. It is recognised that there has been insufficient research in this area to give a totally clear picture, and more studies are needed.

Rural patients can spend enormous amounts of time (and money) travelling, both to access health care, and to visit friends and relations in hospital, so some of the costs saved by the health service are in fact merely transferred to the patient. Baird and colleagues[13] report a study of cancer patients in remote south west Scotland, and their experience of seeking specialist care. 22 days (13% of their remaining life) was spent travelling to or in remote (by rural perspective) hospitals. One 84 year old patient who was receiving radiotherapy described a 7.5 hour one-way journey by the patient transport service from Edinburgh to Stranraer. Even by car this would have taken over 3 hours[13].

As budgets become tight, small local hospitals are less able to attract and retain staff, and especially as there is an overall shortage of manpower. Small local hospitals can offer less experience to those in training, and thus can lose accreditation for having junior doctors' training posts. (Although one could argue that some small units with low numbers of staff in fact provide the training opportunities often missing in large well staffed units, to deal with uncertainty, for doctors to think for themselves, to practice procedures, and offer time for reflection.)

Consultants also can become de-skilled and lacking in confidence if they have inadequate exposure to certain conditions or procedures. This is likely to increase if statistics are routinely publicised in league tables, showing differential outcomes, without at the same time publicising the important access issues.

There is a trend towards downgrading local accident and emergency units, having them nurse-led or only open for certain hours. Part of this is offset by the tendency for rural practices to undertake a good deal of casualty work, but there is much more travelling involved for remote patients, and a big additional load put on rural ambulance services.

The loss of the 'general' physician and surgeon is felt by patients and GPs. The tendency for ever more 'specialism' leads to more tertiary referrals and the consequent opportunities for conflicting advice and confusion and loss of confidence in the patient. It is often not clear who is 'in charge', and communication needs to be much more efficient than is often the case currently. It is sometimes argued that the GP should be the General Physician of the future, yet GPs do not always have access to the necessary hospital support and facilities. Correct initial referral becomes ever more important. Referring to the 'wrong' specialist is a recipe for disaster and delay!

If one part of a small hospital closes, it can have a knock on, domino, effect on other parts of the hospital. For example, withdrawal of anaesthetic or paediatric cover, has a direct impact on the ability to undertake obstetric procedures.

Local hospitals are often a major local employer in small communities, and their closure has a major impact on the local economy, as well as on the community's sense of wellbeing. There is enormous local pride in 'their' local hospital. Similarly, within primary care, if a branch surgery closes, there are important issues of reduced access to care to be considered, along with a feeling of loss within the community.

There are important equity issues when citizens who pay an equal tax contribution have an unequal access to publicly funded services.

Access and quality

I suggest that, *within finite resources, the product of access and quality is a constant*. (It is important to recognise that there are limits to this argument. It depends on all other things being equal; some have traditionally included good access as an element of quality; others have included continuity, an element of quality, within access. But we should recognise the tendency for the one to be affected by the other. Importantly, whenever decisions are being made about reconfiguring services, we should always question whether access to these services may be adversely affected for some patients, and how will this be mitigated.)

If we improve access to care, the quality of that care must suffer; not everybody can immediately access the best conceivable service. Conversely, if we improve the quality of care while maintaining the same level of resourcing, then we are likely to reduce patients' access to that care. For example, only one surgeon will have the very best success rate for a given operation, and he may well be based many miles away; (and not necessarily within the UK!). If we were to stipulate that all outpatients should be seen by a consultant, the short-term outcomes might be better, but there would be fewer appointments. The best consultations are longer than average; the downside is that they are not available to all, within set resourcing.

But as noted above, *access to care is an important issue, just as is quality of care. We need to find an acceptable balance between the two*. This requires us to involve patients in the debate, and to have a clear focus on our patients rather than just on the services we provide.

We need to recognise that providing services acceptably close to patients in rural communities will cost more than centralising all services, but our patients may wish that price to be paid.

How should we address these problems?

Here are some possible approaches which may address the problems experienced by patients living at a distance from secondary care.

Defining best practice

Many local communities have been working in isolation to address these issues. There is a need to identify best practice both from around the UK and from overseas, and disseminate this. In Scotland, an independent advisory group of local people is looking at how to manage two small remote district general hospitals, in the light of the European Working Time Directive, and colleges training requirements[14].

'Keeping the NHS local'[1] offers several models currently being developed which offer hope that reconfiguration of services may allow local hospitals to continue to offer high quality services despite all the pressures towards centralisation; for example, in Grampian, linking community accident and emergency units to the main hospital in Aberdeen by videoconference link, reduced the referral rate by 70% to 80%, and was well liked by patients.

'Keeping the NHS local' supports the contention that centralisation has gone too far. 'There is evidence that centralisation…does not necessarily deliver the expected benefits. The link between volume and outcome for surgical procedures is often overestimated.'[1]

The UK is largely seen as urban; the large majority of the population live within towns and cities, yet this makes the very real problems of rural people greater, as they can be seen as an unrepresentative and insignificant minority. Many solutions are likely to be found from colleagues in other parts of the world, and there is much to be gained from contacts with the international community. Recent conferences of Rural WONCA have established strong links with others who are successfully addressing such issues.

Skills

A thoughtful paper from Richard Garratt[15] who worked for many years in Africa before returning to the UK, offers a different view on skills from his unique perspective. He argues that we need to think afresh about the skills needed for those working in isolated small communities, and that the solutions appropriate for efficient working across the largely urban UK population are a hindrance for the very isolated.

He recounts his surprise, on returning to the UK, of reading that we should not be fitting IUCDs unless we are fitting at least 20 a year; yet he had undertaken countless hundreds of hysterectomies and Caesarean sections etc. in Africa, but only fitted very occasional IUCDs, and then only to teach the technique to others! Was he really to doubt his competence?

We think of skills purely within our own speciality boundaries, yet many skills are easily acquired and could help many isolated professionals if used outside the normally accepted job boundaries. For example, the rural obstetrician could easily develop the skills needed for neonatal resuscitation, and thus not have to rely on the expensive necessity of having a paediatrician present.

Consider the paradox : most venesection is nowadays undertaken by the trained phlebotomist, or nurse; yet for the difficult case, the doctor, who rarely practices this, is called! Similarly, the difficult Colles fracture is reduced by the consultant orthopaedic surgeon, even though he does not routinely undertake this simple procedure. Many simple skills seem to be retained without the need for continuous practice.

We tend to think about skills in a very rigid way, and yet the successful development in recent years of many specialist nurse practitioners shows the potential for innovative thinking.

Enhancing teamwork

The Royal College of Physicians have reported that acute medicine can be provided in the absence of acute surgery, with provisos[16]. The Senate of Surgery of Great Britain and Ireland in a recent report argued that a team based approach improves patient care. Changing the skill mix and improved team work could help deliver European Working Time compliant rotas[17]. Recent reorganisation at the newly built Hexham General Hospital in Northumberland, which serves a small scattered rural population, has seen training grade doctors in the surgical specialties replaced by nurse practitioners, who have undergone training alongside medical students. Similar models are proposed or are being implemented at Bishop Auckland in County Durham, and at the Downe hospital in Northern Ireland[1]. Two orthopaedic surgeons based at the hospital are now replaced by a countywide orthopaedic service where some 28 surgeons can offer more specialist services, largely but not entirely based at the same hospital.

Within Paediatrics, extended roles for nurses are being pioneered in Ashington and Southampton (Neonatal work), and Liverpool (Epilepsy)[18]. Godden and colleagues have described innovative working patterns for remote communities in Scotland[19]. Early experience shows the vital importance of good communication, at all levels, when innovative practices are established.

A rural career path?

Might it be appropriate to consider a specific training programme for those hospital doctors who aspire to work in isolated communities? Is there currently an assumption that all professionals within the NHS should train in order to be able to work anywhere, but usually in an urban environment, and is it expected that all consultants will aspire to work in a regional or national centre of excellence?

In Scotland, there have been successful schemes developed for Rural GP Fellows, and Rural Nurse training. Internationally, the WWAMI group of medical schools, and the Australian clinical schools have been successful in providing appropriate education for those working in a rural setting. The WONCA working party on rural practice have also pioneered innovative thinking.

IT

Improving IT may be a partial solution to the problem of having the appropriate skills far away from the patient who needs them, and this is certainly happening in many parts of the country, for example to support nurse-run A&E departments. A major study in Finland showed the clinical value and cost effectiveness of telemedicine serving a remote rural area[20]. Video conferencing can play an important role in improving access to specialist opinion, and it is possible to have remote review of ECGs and Xrays, as well as surgical procedures[1]. Diagnosis of dermatological conditions can be made using high quality videoconferencing[21], or indeed by high resolution plain photographs. There is much material now available for distance learning, to help remote practitioners maintain their knowledge.

Improving rural transport

Improving transport arrangements could reduce many of the problems of access. Positive discrimination towards funding rural ambulance services would be welcome, and we need to put in the additional funding that this would require as well as measuring the effectiveness of rural ambulances in their response and journey times. (Currently, statistics are only routinely available for a whole region or ambulance service, often covering urban as well as rural areas, and it is difficult to obtain figures specifically covering the remote and rural areas.)

In rural areas, there are often transport difficulties not just affecting the health service, but also transport for education, for employment and leisure, so often the solutions lie in multiple use for available vehicles, and significant funding has been available to develop this in recent years.

It is worth noting that transport problems are a particular issue for those on low incomes, as it can mean a very significant additional cost to arrange their own travel.

Equitable funding

We need to investigate and recognise the disproportionate costs of providing services for rural communities, and we need robust systems in place to ensure that there is equitable funding to meet these additional costs. White and colleagues[22] have studied the English NHS resource allocation system and describe it as fundamentally flawed. 'It effectively takes money from rural and poor areas and gives it to the most affluent parts of the country.' They recommend that the whole of the UK adopt the Scottish system, adopted following a fundamental review as described in the Arbuthnott report, 'Fair Shares For All'[23].

Outreach clinics

There is a long history of regional hospitals and centres of excellence providing a consultant service in outreach clinics and even within general practice. Perhaps we should try to define best practice in this area. There is a cost to the consultant in 'dead' travelling time, but this could save the travelling costs for a considerable number of patients. An additional benefit is the opportunity to meet with local doctors and nurses, to understand their problems and contribute to their training, and develop closer understanding and relationships than are possible from the 'ivory tower'!

'**Ambulatory care plus**' builds on existing primary and community services; Queen Mary's hospital, Roehampton is putting this concept into practice, with a minor injuries unit, general outpatient and rapid diagnostic as well as rehabilitation services[1].

A different relationship between hospitals within a region?

There is the potential to change the way hospitals work together. Local hospitals could remain viable by specialising in the management of relatively straight forward cases, or for example in the management of convalescing patients, while the centre of excellence concentrates more on complicated investigations or operations. This would clearly involve more cooperation and dialogue than is currently the norm!

Conclusion

Many decisions concerning reconfiguration of hospital services are currently taken by small groups working around the country in isolation. We should recognise that centralising services will adversely affect access to care for remote patients, and this aspect must be addressed. Decisions could be helped by clear guidance issued centrally following discussions between health service professionals and those representing rural people; and this paper is an attempt to stimulate such discussions. We need to take due note of experiences elsewhere in the world, and develop and test more innovative solutions.

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Competing interests: the author is a rural GP and rural patient.

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