

Report of a workshop involving the Academy of Medical Royal Colleges and the Nuffield Trust

Acute care in remote settings: challenges and potential solutions

Working paper

July 2016

The Nuffield Trust and the Academy of Medical Royal Colleges held a seminar in April 2016 to discuss the challenges of delivering high-quality health care in rural and remote settings. The aim of the event was to increase understanding of the issues faced by rural and remote communities and to consider what local and national bodies could do to ensure sustainable services are available for the future.

The workshop brought together representatives from the Royal Colleges, rural systems around the UK, NHS England and NHS Improvement. Case studies from the Cumbria Success Regime and Belford Hospital Fort William were used to inform the discussion. This report identifies the key challenges and some emerging solutions. It also notes some problems that will be difficult to resolve and suggests actions that may be required from a number of national bodies.

Acknowledgements

This is a report of a workshop held by the Nuffield Trust and the Academy of Medical Royal Colleges on 5 April 2016 at the Royal College of Anaesthetists, Red Lion Square, London. The views expressed in this report are those of the participants and do not necessarily represent the views of the Academy of Medical Royal Colleges or the Nuffield Trust.



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Introduction

The Nuffield Trust and the Academy of Medical Royal Colleges held a seminar in April 2016 to discuss the challenges of delivering high-quality healthcare in rural and remote settings. The aim of the event was to increase understanding of the issues faced by rural and remote communities and to consider what local and national bodies could do to ensure sustainable services are available for the future. We wanted to explore the extent to which current guidance, standards and staffing models need to be modified to support the requirements of populations in these areas. While the discussion focused on small, rural and remote services, some of these ideas generated have the potential to be applied more widely.

The workshop brought together representatives from the Royal Colleges, rural systems around the UK, NHS England and NHS Improvement. We used case studies from the Cumbria Success Regime and Belford Hospital Fort William to inform the discussion. This report identifies the key challenges, some emerging solutions, and also some problems that will be hard to resolve and the actions required by a number of national bodies.

We were impressed by the willingness of participants to be open to new solutions. We hope they will work collectively to answer the questions that arose from the seminar.

What are the issues?

While the UK does not have the extremes of geographical remoteness found in some parts of the world, there are a number of areas, some with relatively sizeable populations, which have difficulties creating safe and viable hospital services. These difficulties may be due to their distance from major centres, or to sparsely distributed populations with poor public transport links and low rates of car ownership. The problems identified in the workshop are explored in this report under the following headings:

- staffing models, including sub-specialisation and recruitment
- training and education
- standards, inspection and regulation
- patients and the public.

Solutions

We identify a range of possible solutions in the form of:

- new staffing models
- networks
- revised approaches to training
- reviewing standards and regulatory requirements

- costs and payment mechanisms
- dialogue with the public.

Recommendations

We include a series of recommendations for exploration and action by national and local leaders including royal colleges, regulators, higher education and arm's-length bodies.

What are the issues?

Staffing models

The guidance from Royal Colleges, the standards set by regulators, and the requirements of training all create particular challenges for rural areas. For example, standards based on minimum numbers of patients or numbers of consultants may not be achievable because there the population to sustain the service does not exist. Where a service does exist and staff can be recruited, rotas may not be affordable due to relatively small patient volumes and due to the numbers of staff required to construct a compliant rota. Maintaining skills when activity levels are low is also a challenge.

Sub-specialisation

The trend to sub-specialisation also means that it is hard to recruit the type of general physician or surgeon that is competent in dealing with an unselected range of emergency patients. Rural areas often require a mix of skills that cut across current specialty or sub-specialty boundaries. This means that the right clinical professionals are not just difficult to recruit; they may not even exist. In anaesthetics, some newly qualified consultants are not able to cover the ITU. In A&E and acute medicine, the model of two separate rotas is both difficult to create and recruit to, and also expensive, given relatively low volumes of work.

Recruitment

As noted, the pool of people with the right general skills has been depleted by sub-specialisation. On top of this, across the developed world, the depopulation of rural areas makes the recruitment of professionals increasingly difficult. People who go to cities to study for professional qualifications tend not to return. The low volumes of work; difficulties connecting with professional colleagues; the problem of employment for partners; and a number of other issues combine to make recruitment of all professionals in these areas a challenge. Additional medical schools in rural areas were supposed to increase the availability of staff in rural areas. However, delegates were not sure that this objective was being achieved.

Cumbria has more than 50 vacancies in a consultant workforce of over 200, with critical shortages in acute medicine, paediatrics and other key specialties. This means that its hospitals are highly dependent on locum cover, which may reduce the attractiveness of posts to permanent staff. It also makes it less easy to get clinical staff involved in service redesign.

Training and education

While smaller hospitals and remote settings can offer a good training experience, with opportunities for involvement in a wide variety of cases, consultant supervision and the support available to trainees can be an issue. Workshop participants noted that the attractiveness of the facilities, reputation and distance from peers is also an issue for trainees. It is notable that smaller hospitals do seem to have been losing training places. Training in rural and remote settings offers benefits, particularly with respect

to developing leadership skills and expertise as an autonomous practitioner. These were felt to be undervalued in the current system, leading to the placement of more junior trainees in the smaller units. Participants pointed out that the relatively lower level of training infrastructure may be given undue weight when measured against the experience available to trainees when assessing training.

Standards, inspection and regulation

Workshop participants thought that there was a tendency to apply standards in ways that do not recognise the particular challenges of rural and remote services. We heard evidence that regulators and planners were interpreting guidance as rules, which was not the intention of the original sponsoring organisations. Often the judgement and expertise of local leaders is not trusted or supported.

Some of the standards and assumptions made by external bodies were based on models from large urban centres. This is a particular issue when standards are expressed in terms of inputs. The evidence that input-based standards and models are directly linked to outcomes is often poor, and may fail to take into account other, different ways of achieving high-quality outcomes.

The question of how far standards should be made flexible enough to recognise context is a thorny one: while flexibility may be desirable, there comes a time when, in flexing so far, safety is at risk.

Costs

Rural and remote services suffer from the dual problem of high costs from sub-scale operations and higher transport costs for staff and patients. There is a relatively high fixed-cost element of running hospital services, which means services with low volumes tend to be disproportionately expensive with little opportunity to attract additional activity to defray costs.

Time-sensitive care

Staffing guidance that is intended to reduce risks for patients may make it difficult to provide services such as emergency surgery, paediatrics and obstetrics. However, the nature of these services means that centralising them to major centres also creates risks for patients. Even where some services can be centralised, it is a challenge to ensure that the right patients get to the central service quickly while other patients are treated locally. For example, to send all sick children or patients with abdominal pain to a major centre would risk overwhelming it, as well as being very costly and inconvenient to patients.

Patients and the public

The views of patients and the public are of critical significance in shaping services. A number of the participants reported having had productive conversations with the public about the trade-offs and risks associated with some of the models in remote places. In some rural areas, it is accepted that there will not be the same ease of access to many services. However, while it was reported that populations might be willing to trade quality for access, individual patients could suffer, and if there was a significant departure from best practice, they would have the right to a legal remedy for this.

Professionals at the workshop did not wish to see models emerging where outcomes are compromised as a consequence of designing services to fit remote or rural settings.

Rural deprivation is an additional problem. Low car ownership and poor public transport services exacerbate access difficulties and can make options such as care at home harder to deliver. Service models need to address this.

What are some of the solutions?

Workshop participants thought that the objective should be to ensure that the populations in rural and remote areas receive excellent care as close to home as is safe and practical. Local community and primary care services should receive good support from secondary care services to enable them to provide a large proportion of care locally. This will require changes in a number of areas of policy, payment and resource allocation, professional education and job design. It may also need to be supported by changes in the approach to regulation and inspection. We explored a number of ideas about what needs to happen to deal with the challenges identified above.

New staffing models

Rural and remote areas need to be allowed to develop new approaches to staffing and delivery models.

Combining rotas and services

One possible way forward is to combine A&E, acute medicine and other disciplines such as intensivists and geriatricians to create a single rota and service for dealing with medical emergencies. This approach is also worth considering for less rural smaller hospitals. This model would merge A&E, medical and surgical assessment services. Minor injuries and primary care components of the emergency front door could be dealt with within this unit using nurse practitioners supported by GPs or other medical staff.

Dual and broad-based training

Dual training and broad-based training would create a larger pool of staff with a wider range of skills.

For more common emergencies, Belford Hospital in Fort William (see case study on page 14) uses dual-trained GP/consultant physicians, plus surgeons with a broader range of skills. However, this solution may be elusive as there is no easy route to training these types of multi-skilled professionals. Indeed, it was reported that Health Education England had stopped broad-based training and the routes to creating the type of staff required by small and rural hospitals had got harder. In Australia, Canada and parts of the United States, generic training and specific rural training play important roles in skilling doctors for the rural setting.

Advanced practitioners

The further development of advanced practitioners, to take on work currently done by trainees, should be actively explored. This has the advantage of creating greater continuity in the team but can potentially deplete senior staff in other areas. There are also particular opportunities to train non-medical staff to carry out specific procedures.

It should be noted that this requires an investment in education and training and will need some changes in regulation and legislation.

Combining GP, ambulance and hospital services

Combining GP, ambulance and hospital services, particularly out of hours, also offers opportunities to make better use of staff and reduce costs. The potential scope for GPs to work with these services requires further exploration, but there are existing models in the UK and in Europe that show how this might be developed.

Matching staffing to case mix and demand intensity

There needs to be scope to match staffing more closely to the case mix and intensity of demand than to rigid guidelines. Training for tasks or for specific roles would be beneficial. It would also be helpful to train clinicians for tasks that would usually be outside their expertise but which might be required in an emergency or could safely reduce the requirement for onward referral.

Networks

The development of wide-area networks is seen as a major part of the solution. Clinical networks can help address workforce and training challenges including lack of generalist skills, low volumes, training issues, difficulty in providing 24/7 consultant and junior doctor cover. Consolidating some procedures at 'hub' units through a network can reduce the need for certain staff groups to be present at some locations, generating more efficient ways to achieve 24/7 cover for different roles.

A key component is the potential to provide advice and support through the use of technology. There are many examples which show it is possible to separate the process of collecting clinical information, examination and even undertaking some procedures, from the provision of expertise, diagnosis and decision making. This can apply to the management of intensive care patients through eICU and advice and guidance on a large range of problems.

The development of trust between professionals and the maintenance of the skills of the individuals in the remote settings was seen as very important by workshop participants. This is why the rotation of staff or the opportunity for the remote staff to work in the central units is vital. Participants thought that this would mean that appointments need to be made to networks.

Workshop participants were concerned that the spoke components of hub and spoke models can get a poor deal. There may be a need to rethink the governance of networks to deal with this by making them more formally accountable for delivering services and standards across the network. There was a view that rural problems should be seen as requiring a region-wide solution. Networks should therefore not be a simple outreach from a tertiary centre. As one participant put it, "the role of the centre should be to support the periphery".

The technology and transport infrastructure to support networks requires more attention – for example ensuring that PAC systems can exchange and read data. There is also more to do to explore the role of helicopters, flying squads – where the clinicians come to the patient – and retrieval teams. This is an area where some of the models need further development and where there may need to be some flexibility in the application of standards.

Training

Rural and remote hospitals should be valued more for the training they can offer. Participants thought that there is an argument for more experienced trainees to be posted to these hospitals where they will have more opportunity to contribute and gain experience of autonomous practice. This could be complemented by the testing of new workforce models in the larger centres.

Participants advocated a more bespoke approach to training that enables professionals to meet the challenges of rural and remote health care. The upfront costs of tailored training are likely to be small in relation to the costs of long-term locums or, worse, service failure.

Recruitment

There are opportunities to make positive changes that would help broader efforts to deal with recruitment issues. These include the building of networks to give staff the opportunity to develop and keep up to date as well as develop professional relationships.

Furthermore, allowing the recruitment of couples would allow jobs to be created for professionals and their partners.

Although we heard that some other countries offer large financial incentives to work in rural and remote areas, this was not thought to be a good way forward, partly due to the impact on the costs of existing staff. The incentives that already exist were already thought to be sufficient. The issue may be more about the design of the roles, the presence of good colleagues and the quality of the local environment (schools etc).

Giving trainees a high-quality experience in rural settings was seen as an important opportunity where further work is required, including attention to the quality of accommodation.

Recruitment to substantive and training posts could be helped by 'buddying' smaller and remote hospitals with larger hospitals in urban centres, which would then provide doctors for short rotations.

Revised standards and regulation

Regulation

Regulators need to acknowledge that different geographies may require different approaches, without diminishing the need to deliver high-quality outcomes. Participants thought that the regulatory regime, both professional and organisational, should be open to new service and staffing models, subject to their delivering good outcomes. This reinforces the need for more diverse ways of assessing quality.

Reviewing the application of standards

There was consensus that while standards are important, there are dangers in their misapplication. They should be used intelligently with regard to the local context, with a detailed understanding of the impact on other services of applying a particular standard.

There was a proposal that it would be useful for the Academy to coordinate work on how standards interrelate, and for Colleges and other bodies to give more clarity about how standards should be used and interpreted or whether new standards for rural

settings should be developed.

A further workshop will be held to explore these issues with the regulators. There was a strong view that the regulators need to give more consideration to ways of applying standards in rural and remote services.

All those involved in setting and assuring standards need to revisit this area; check for conflicting requirements; and identify where there is scope for flexibility to recognise the particular issues of rural and remote areas.

Payment mechanisms and costs

There was agreement among participants that the current payment mechanisms do not reflect the additional costs of rurality. While it is not clear how far higher costs are the consequence of small scale, remoteness, or other factors, nor what the level of these effects might be, there was agreement that they are significant and need to be taken into account. The PBR model is not a suitable vehicle for reimbursing these costs as they are not related to case volume. Any supplement for providers would either have to be paid as a top-up, or would need to be reflected in commissioners' allocations.

The payment and accountability systems are also not well adapted to supporting network operations. Work is required to develop models that support this.

The public and patients

The focus of the workshop was on standards and professional guidelines, but the question of patient preferences around access versus quality was a theme throughout the day. There was a strong view that more should be done to engage the public and understand their preferences and how the guidelines and standards should relate to these. There appears to be a need for an engagement model for rural communities which delivers evidence based public and patient preferences. A more critical view regarding the benefits and problems of reconfiguration is also required.

Unresolved issues

More consideration needs to be given to models for safely providing consultant-level obstetric care in small hospitals where some key support services may not be provided or may be provided in a non-standard way. Obstetric disasters can happen very quickly and some of the models used in other specialties, such as risk-based selection, technology-assisted advice and transfer/retrieval work less well. The Birthplace study shows that there are very high rates of mothers being transferred out from low-risk units, particularly those delivering for the first time, so these are not a satisfactory replacement in very remote areas. In such settings in some countries additional scans at 32–34 weeks are used to identify mothers at high risk, who are then temporarily transferred to live near a major hospital.

A model for ambulatory paediatrics has been developed by the Royal College of Paediatrics and Child Health, but there is more to do to test whether this is viable in more rural locations, in terms of cost and recruitment.

There are unanswered questions about the intensity of work and activity levels which could potentially allow for viable rotas to be constructed with numbers of doctors that are greater than those in Belford, but less than those suggested by current College guidance – that is, numbers which allow for sustainable trade-offs between the frequency of on-call and intensity of on-call work, while having activity levels that are sufficient to retain professional skills.

If we are to secure confidence in more innovative models of care and ways of working we need good outcome measures. At the moment, mortality rates tend to be the dominant measure, yet small numbers, and thus wide statistical confidence intervals, make them a blunt or even unhelpful measure. We need to find broader and more meaningful measures of quality for these settings.

The development of generalist skills was frequently identified as part of the solution, but there is more to do to explore what this really means in practice. The Nuffield Trust and academic partners are exploring this issue including the skills required across the whole hospital, the opportunities for cross-skilling across conventional speciality boundaries and the models for delivering this type of care. Details of this project are available at www.nuffieldtrust.org.uk/our-work/projects/medical-generalism-smaller-hospitals.

Further research and development

There is further work to do on the development of models for paediatrics and obstetrics. The scope for using new roles supported by technology and transport needs further investigation. There is a need to better understand how to predict and mitigate risks. The approach of the NHS to high-impact, low-probability events may have created a degree of over-specification – it is not clear what the costs and benefits of this have been.

Conclusions and recommended actions

There are a number of solutions available for the problems facing rural and remote hospitals, but some of them require some change in approach, new models, the deployment of technology, and different approaches to creating and running networks. There is a willingness to try innovative models but some significant obstacles remain, and some problems are still arising where the solutions are not so obvious in the UK setting. Although solutions to these do exist in other countries, these are not easily adapted to the UK setting – often due to the smaller numbers of doctors in some specialties. Further work is required to develop and refine some of the solutions and to ensure that the frameworks of guidance, standards, training, regulation and system management rules are not creating unnecessary obstacles.

Recommended actions

Colleges/Academy

Recommended actions for the Royal Colleges and the Academy are as follows:

- Review current standards in the light of the issues in rural and remote but also smaller acute hospitals to ensure that they are fit for purpose
- Be clear where there is flexibility and demonstrate that the interdependencies are properly taken into account. There is a more general question to be answered about how standards are used and the need to differentiate between standards that are aspirational rather than non-negotiable
- Consider the implications of the idea of combining the ‘front door’ emergency specialties more in rural and smaller hospitals.

HEE/NES/LETBs/Deaneries

Recommended actions for HEE, NES, LETBs and deaneries are as follows:

- Work with the Colleges, professional regulators and rural health systems to review the models of training available for doctors and other clinicians to develop individuals with the right range of skills and ability to perform specific tasks
- Consider restoring the broad-based training programmes
- Review the approach to the placement of trainees in smaller and rural hospitals.

CQC

Recommended actions for the CQC are as follows:

- With the Colleges, review whether current standards are appropriate and develop thinking about how inspection approaches need to develop to recognise new models, networked approaches and new staff roles.

- Consider the extent to which inspectors are applying models derived from large hospitals to rural areas. Where this is the case, and how appropriate is it?

GMC and professional regulators

With regard to the GMC and professional regulators, issues regarding prescribing rights for some of the new roles are likely to arise. These will need to be addressed.

NHS England, NHS Improvement and local system leaders

Recommended actions for NHS England, NHS Improvement and local system leaders are as follows:

- Develop network solutions and new methods to hold networks to account that mean that the centre truly supports the periphery
- Develop approaches to the governance of the network
- Review payment methods for rural and small-scale services that including the idea of rural premiums for commissioners and providers
- Examine how to strengthen the transport arrangements for transfer, retrieval and taking professionals to the patient where required.

Case study: Fort William

The Belford Hospital at Fort William has a resident population of 28,000, but a large visiting tourist population. It is 70 miles from the next nearest secondary care facility. It offers a wide range of emergency and elective care, including:

- 24-hour emergency medicine and surgery
- Day case surgery
- 24-hour radiology and pathology
- Rehabilitation
- Outpatient services – a large number on a visiting basis
- Allied health professional services
- Midwifery service
- GP out of hours
- Community dentistry and other community services.

Medical and surgical care is integrated and run as one unit. Medical staff are on call a lot and required to be very flexible, but the lower intensity of work makes this more manageable. This approach was clearly something the team presenting enjoyed but it is somewhat different from what other senior staff might expect in their roles. Senior staff are able to work across traditional boundaries, so, for example, emergency patients might be seen by a surgeon, physician or anaesthetist for their initial assessment.

Senior physicians have relationships with and surgeons have visiting appointments at major centres. This enables both groups to keep their skills up to date. Telemedicine and visiting specialists also provide support to the service.

A key component of the model is the daily consultant-led MDT including social care. Patients requiring major interventions, critical care, etc., are stabilised and transferred, but in practice only 6% of patients are transferred out.

A detailed case study prepared for the workshop by Dr Patrick Byrne and Miss Sarah Prince of Belford Hospital is available from the authors upon request.

Participants were impressed with the model and how it had been developed. There were questions about the extent to which the model could be expanded to cover larger populations, the extent to which it is dependent on being able to recruit senior medical staff with a rather rare set of general medical, surgical and leadership skills. These senior professionals need to be willing to trade more frequent time on call for a lower level of intensity of work and to work very flexibly with frequent multi-tasking.

Case study: Cumbria

Cumbria has a population of around 500,000 spread over a very large area, with long travel times between centres. It has had recurrent issues with recruitment, quality, and compliance with NHS standards. These have been exacerbated by financial problems and rapid leadership turnover. Particular problems include the small size of maternity units and their ability to meet obstetric and anaesthetic standards.

There are problems for intensive care, as some newly qualified anaesthetic consultants do not have critical care training and major gaps in emergency medicine and specialty staff at middle and senior levels. One hospital has 100% locum middle grades and only two substantive consultants in acute medicine. Paediatric standards for A&E cover are only partially met.

Solutions are proving difficult to find. The following areas are being explored, but this is a work in progress and some problems are not fully resolved:

- Cross-site working and shared working approaches in anaesthetics
- Development of a 'composite' staffing model for acute medicine
- Transfer of high-risk patients to the main site for acute medicine
- A focus on the deteriorating patient and moving as much out-of-hours work as possible into daytime anticipatory/ambulatory care
- In A&E, provision of the ST4 competency overnight is currently achieved through a hybrid rota, which includes some GPs. This has been successful. Some preliminary work is being done around air retrieval, in part to help to improve recruitment
- In paediatrics, the development of a new medical workforce model based on single team of 15 consultants who are resident on-call at West Cumbria Hospital (WCH); further use of advanced paramedic nurse practitioners (APNPs) and (potentially) integration with community paediatrics. Options for limited hours assessment models are being developed for remote sites, but these require a lot of senior staff
- Provision of midwifery-led care at WCH, with other births booked at Cumberland Infirmary. However, the question of access and transport needs to be addressed. Transfer time is also an issue even with dedicated transport.
- For obstetrics, the implementation of a 'consultant-led, consultant resident on-call' system is being considered at both sites, implemented via a hybrid system over a period of time. This would require additional consultants and requires a significant change in the working practice of existing staff, who have concerns about this
- Emergency surgery has been centralised and a surgeon is present at Whitehaven 8-6 Monday to Friday and 8-12 Saturday and Sunday for assessment
- The trust is looking to extend the roles of staff and GPs to widen the scope of local services.

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Nuffield Trust is an independent health charity. We aim to improve the quality of health care in the UK by providing evidence-based research and policy analysis and informing and generating debate.

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