

Models of generalist and specialist care in smaller hospitals in England: a mixed-methods study

Louella Vaughan,^{1*} Martin Bardsley,² Derek Bell,³
Miranda Davies,¹ Andrew Goddard,⁴
Candace Imison,¹ Mariya Melnychuk,⁵
Stephen Morris⁵ and Anne Marie Rafferty⁶

¹Nuffield Trust, London, UK

²The Health Foundation, London, UK

³Imperial College London, London, UK

⁴Royal College of Physicians, London, UK

⁵University College London, London, UK

⁶Florence Nightingale Faculty of Nursing, Midwifery & Palliative Care, King's College London, London, UK

*Corresponding author Louella.vaughan@nuffieldtrust.org.uk

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Disclaimer: This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

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Scientific summary

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Background

The rising number of older and more complex patients is considered one of the most pressing problems facing the NHS. It has been suggested that the current models of hospital care, which are heavily based around specialists delivering disease-specific care, serve these patients poorly, as they are often fragmented and less accommodating of multiple needs. This is particularly a problem in smaller hospitals, where patient populations are older and more vulnerable and where size imposes constraints on staffing and resources. A revival of medical generalism in smaller hospitals has been posited as a way of countering these problems and providing better and more cost-effective care. However, there is a paucity of evidence regarding the case mix of patients presenting to smaller hospitals, the current models of care and their relative merits and costs, and the preferences of staff and patients, making it difficult to know how best to improve care.

Objectives

The overarching aim of this study was to identify the models of medical generalism used in smaller hospitals and to investigate their strengths and weaknesses from patient, service and professional perspectives. Our objectives were to:

- create a typology of the different models of care, considering workforce deployment, skill mix and service configuration of generalist and specialist care used in smaller hospitals
- create a case-mix classification that identifies patients who may benefit from generalist care and use this to describe and compare workload, resource utilisation and outcomes between hospitals and models of care
- assess the degree of alignment between patient case mix and medical generalist/skill mix in smaller hospitals
- identify the strengths and weaknesses of the different models from patient, professional and service perspectives
- investigate the economic costs attached to different models
- assess the types, utility and relevance of potential variables and measures of outcome for a more detailed evaluation of the different models of medical generalism
- explore the different meanings, definitions and boundaries of medical generalism in the context of smaller hospitals.

Methods

The design was a mixed-methods study with five interlinking work packages.

Design

Work package 1

Work package 1 was a scoping and mapping exercise, using a multistep approach. Organisational profiles were created for all smaller trusts in England ($n = 69$). Telephone surveys were conducted with trusts that agreed to participate in the study ($n = 48$; 50 hospital sites); these mapped processes of care across the acute/emergency pathway. A typology of the models of medical generalism used by hospitals was created, which was based on patterns of consultant specialist versus generalist working across

acute medical units and wards. Case study visits ($n = 11$) were used to examine in more detail the similarities and differences between the models of care, as defined by the typology, and to evaluate the broader contexts in which models sit, as well as the definitions, boundaries and meanings of medical generalism as theoretical concepts and lived experiences. The workforce of smaller hospitals was further described using additional data from NHS Digital.

Work package 2

Work package 2 created a classification using Hospital Episode Statistics of acute medical patients who may benefit from generalist care and used this to describe and compare workload, resource utilisation and outcomes between hospitals and models of care. An assessment of the alignment between patient case mix and medical generalist skill mix was also performed.

Work package 3

Work package 3 investigated the relationship between the typology of the models of medical generalism and the patient-level costs using costed emergency admissions data, which used 2015/16 Hospital Episode Statistics data for the 43 hospitals that had fully available data. Spell-levels costs were regressed against the variables of medical generalism typology and other covariates.

Work package 4

Work package 4 explored the strengths and weaknesses of the models of care from patient, service and professional perspectives using a variety of methods, including interviews ($n = 95$), staff focus groups ($n = 6$ focus groups with 47 participants) and patient focus groups ($n = 5$ focus groups with 17 participants) and a discrete choice experiment ($n = 214$). The impact of typology on other outcomes was explored.

Work package 5

Work package 5 focused on synthesising the qualitative and quantitative data to identify how models of care are developed, enacted and perceived.

Inclusion criteria

This study focused on smaller acute NHS hospitals in England. A report previously defined 'smaller' hospitals as providers with an operating revenue (income) of $< \text{£}300\text{M}$ (Monitor. *Facing the Future: Smaller Acute Providers*. London: GOV.UK, Monitor; 2014). Sixty-nine trusts were found to fit this definition in 2015/16 and 68 trusts in 2017/18. This definition captures virtually all single-site trusts but for parts of the analysis requiring accurate hospital-level data, all multisite trusts were removed.

Results

We present the main findings based around the patient, service and professional perspectives.

Overview of models of care

The key underpinning assumption of this study was that smaller hospitals deployed a limited number of clearly defined models of care that could be classified along a spectrum of generalist care to specialist care and were amenable to a systems analysis approach. Instead, we found that no two hospitals operated identical systems of care and that systems were resistant to classification and comparison. We therefore focused on the two main locations of medical generalist working for the creation of the typology: the acute medical unit and the downstream medical wards. We categorised acute medical units according to the patterns of consultant working (acute physician-dominant, specialist-dominant or mixed) and by whether or not the unit was heavily bounded and the subsequent patterns of patient 'ownership' by medical teams (closed, open or partial). Downstream wards were similarly classified by their degree of closed/openness, as well as by how hospitals labelled the wards and distributed patients across them (i.e. general medical wards and specialty wards).

The classification of the 48 hospitals for which we had sufficient data found that 25 different models of care were in operation; no single model was used by more than four hospitals. We further found that there were two trends in terms of arranging care at the front door. The 'acute hub' model looked to co-locate services with a primary assessment function into a single 'hub', whereas the 'hyperstreaming' model saw the bulk of the work of primary assessment moved out of the emergency department and 'streamed' into a series of parallel locations.

Most models of care, regardless of how they were defined or arranged, were highly unstable and in an almost constant state of flux, with usual processes of care frequently breaking down in the face of internal and external pressures.

Patient perspective

Analysis of Hospital Episode Statistics data of 1.9 million care episodes found that the differences in case mix between hospitals were relatively small, with 65–70% of episodes accounted for by 20 case types; the majority of this work was viewed by expert consensus to be 'generalist' in nature. The skill mix of hospital staff varied widely and there were no relationships found with case mix. Patients exhibited a preference for specialist care in the discrete choice experiment but indicated in focus groups that overall hospital quality was more important than whether models of care were more generalist or specialist.

Service perspective

We found that smaller hospitals have been subject to major increases in demand, with an increase in the number and complexity of patients, an increase in the number of stays of < 48 hours and a reduction of 2 days in average length of stay over the past 6 years.

Models of care as conceived emerged as being contingent on complex constellations of factors, including staffing, the local hospital environment and policy imperatives.

Neither the model of care, as defined by the typology, nor the case mix accounted for the variability in length of stay (no associations were significant at $p < 0.05$). Analysis of pathways of care found that there was marked variability not only between organisations but also within them; in many organisations, patients with similar conditions did not follow care pathways consistently. The economic analysis found that the costs did not vary significantly by characteristics of the acute medical unit or the downstream wards, or by the proportion of medical staff in the hospital who were generalists. This suggests that the differences in both outcomes and costs are the result of hospital-level factors other than patterns of consultant working.

The qualitative work suggested that demand frequently overwhelmed smaller hospitals, leading to the differences between models of care as conceived and the models in action. Models of care did not appear to be scalable, with hospitals with < 300 beds preferentially employing more generalist models.

Professional perspective

The qualitative work found that the preferences of doctors for generalist working versus specialist working were contingent on the hospital environment and the heaviness of the burden of generalist working. Experiences of training were also important, with preferences for generalist working being associated with longer periods of training; younger specialists frequently felt poorly equipped to care for older complex patients.

Although the majority of consultants who were interviewed accepted generalist working as an inevitable consequence of working in a smaller hospital, we found patterns of behaviours, particularly 'flight from the front door' and 'fortressing', whereby consultants actively sought to limit their exposure to generalist working and regulate their own workloads. These behaviours were viewed as highly destabilising and the presence of these correlated with more negative views of organisational culture and leadership.

The preferences for withdrawal from participation in front-door services and specialist working were expressed more strongly in the discrete choice experiment.

Smaller hospitals

Although this study was constructed primarily as an exploration of aspects of care within hospitals, it rapidly emerged that systems of care could not be divorced from their contexts. Staff considered their organisations to be categorically distinct from larger teaching organisations and 'smallness' to be the most powerful explanatory category of their experiences of delivering care.

The view that smaller hospitals might be distinct was supported by the explorations of case mix, which found that there were more similarities than differences across all 69 organisations. The exception to this was the few smaller hospitals in highly urban areas.

Most smaller hospitals viewed themselves as being under genuine existential threat, owing to a combination of a lack of resources and external 'system shocks'. Although we did not measure organisational climate, hospitals with stable leadership teams who had invested in cultural change were associated with environments that staff viewed as desirable to work in and more stable systems of care.

Concepts of medical generalism

Concepts of medical generalism were found to be complex and difficult to define, with theoretical models differing markedly from models in action. Although there was overall agreement with conceptual models that defined generalism positively (ways of doing, being and knowing), 'ways of being' emerged as being contingent and dependent on doctors' daily experiences of work, the satisfaction derived from this and the sense that medical work was transparently and equitably shared.

These findings begin to question whether or not the categories of generalist and specialist are useful labels for the ongoing division of work within hospitals and whether or not more sophisticated ways of thinking about patients and their needs are required.

Limitations

The study suffered from a number of limitations, which may limit the generalisability and the applicability of the study. Smaller hospitals in multisite trusts were excluded, potentially leading to sample bias. Initial a priori assumptions were made about the nature of medical generalism and how this might be expressed within hospital systems, such as there being a limited number of stable models utilised by organisations. Instead, models of care were found to be resistant to classification at the system level and to be highly unstable. This necessitated a narrow scope for the creation of the typology, with the focus on consultant medical staff and doctoring on the acute medical unit and the downstream wards. The inherent instability of the models of care limits the robustness of the analysis of models against outcomes. No comparisons were made with larger hospitals and there was uncertainty around some of the economic costs at spell level. The qualitative work focused on interviews with no immersive non-participant observation conducted and it was found that it was difficult to capture the views of patients and carers on medical generalism. The attributes selected for the discrete choice experiment may not have been those that would be most important for real-life choices and the number of responses was limited.

Conclusions

Main conclusions

This study sought to examine the contention that medical generalism may provide a way to deal with the rising numbers of patients who are complex or have multiple comorbidities, particularly in smaller hospitals. The case mix of smaller hospitals was highly similar across the cohort and was dominated by patients with presentations that were probably amenable to generalist approaches to care.

Although generalist models of care appeared a more natural fit for smaller organisations, there was no evidence that any of the models of care that we identified produced better outcomes for patients; the costs of the different models were not significantly different. The willingness of medical staff to work in generalist ways was dependent on their training and their lived experiences of working within organisations. This suggests that matching hospital staff to meet patient need and the creation of more collaborative working environments is more likely to improve care than changing models. Smaller hospitals should be considered as different from their larger counterparts for the purposes of planning and decision-making. Therefore, although medical generalism may provide a way of caring for an ageing population, the delivery of high-quality care will be possible only if the right conditions are created to support generalist working both within individual organisations and across the NHS as a whole.

Recommendations for future work

1. Mapping and understanding the models of emergency and acute care across the whole of the NHS, including an exploration of the relationship of models of care with patient and hospital-level outcomes and the models of care and the organisations in which they sit.
2. Studies of the deployment of the medical workforce across the NHS as a whole and within individual hospitals and the relationships between workforce, models of care and measures of hospital culture. This should include an exploration of how skills gaps in doctoring impact on and are compensated for by others, particularly nursing and allied health-care staff.
3. Development of more sophisticated methodologies, particularly those of a rapid nature, to deal with the marked variation seen in health-care systems and to test specific organisational and contextual factors that help or hinder system improvements.
4. Applied research into how more refined case-mix analyses may allow organisations to make better choices around the configurations of services, model future services and monitor subsequent change.
5. Better understanding of medical work and the decisions around its distribution and how this translates into differences in patient journeys and impacts on outcomes for both the patients and the system.
6. Analysis of what skills, experience and expertise are required to provide excellent care for complex comorbid patients and how the undergraduate and postgraduate curricula should be structured to ensure that the next generation of doctors is fully equipped to meet the challenges of changing patient need.
7. Further research on what constitutes satisfying work for doctors and other health-care professionals, the relationship between work environment and both positive and negative physician behaviours and how hospital environments can be shaped to support this.
8. Better understanding of how smaller hospitals might meet the needs of their local populations, recruit and retain appropriate staff and be supported to provide high-quality care.
9. Better understanding and further exploration of the costs attached to different models of care, particularly the nuances around the patterns of deployment of consultant staff.

Study registration

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