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Original research

'Not quite Jericho, but more doors than there used to be'. Staff views of the impact of 'modernization' on boundaries around adult critical care services in England

Mary Durand, Andrew Hutchings, Nick Black, Judith Green
Department of Health Services Research & Policy, London School of Hygiene and Tropical Medicine, London, UK

***Objectives*: To explore staff perceptions of the impact of 'modernization' on the organization, delivery and culture of adult critical care services in England. 'Modernization' policies aimed to alter the boundaries around critical care and create a comprehensive, seamless service.**

***Methods*: Seven hospitals (three teaching and four district general hospitals) in three critical care networks participated. In-depth interviews were conducted with a purposive sample of 45 critical care staff. Data were analysed thematically.**

***Results*: The boundaries around critical care were generally perceived to be less fixed than previously. The reframing of 'internal walls' within hospitals was associated with the introduction of outreach teams, new hospital-wide remits for intensive care unit (ICU) staff and the greater integration of allied health professionals into the critical care team. Transformation of services was challenged by practicalities including the need for additional staff, and a 'them and us' attitude between ICU and ward staff. 'External walls' between hospitals were breached where local clinical networks were perceived to have successfully improved communication and joint working. This was facilitated by effective leadership, availability of network-associated funds, the identification of common problems and evidence of benefit from cooperation. However, barriers existed and there was some scepticism among staff as to whether critical care can ever be entirely 'without walls'.**

***Conclusions*: Policies to remove boundaries around adult critical care are perceived to have had a dramatic impact on the organization of the service. Considerable progress was reported towards developing comprehensive critical care services both within and between hospitals.**

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Introduction

In 2000, the Department of Health (DH) funded a 35% increase in the number of critical care beds in England[1] and published a strategy to 'modernize' adult critical care by creating a specialty based on severity of illness and level of care required, rather than on a patient's location in the hospital.[2] The strategy had several components: the integration of critical care with other acute hospital services through the introduction of outreach teams and National Health Service (NHS) trust-wide Critical Care Delivery Groups (CCDGs) (see Box 1); the establishment of 29 clinical networks involving all NHS trusts providing critical care; and encouragement of local service improvement projects.[2] The adoption of the 'care bundle' approach,[3] where groups of clinical guidelines are implemented together, was also encouraged. The NHS Modernisation Agency's critical care programme was designed to support hospitals in implementing the policy. An evaluation of the impact of the 'modernization' programme across 96 intensive care units (ICUs)[4] found lower case mix-adjusted mortality, reduced unplanned night discharges, reduced transfers between units, and evidence of greater cost-effectiveness, all indicative of improvements in care. A qualitative study was also carried out to explore staff views on the 'modernization' process.

Mary Durand PhD, Lecturer; **Andrew Hutchings MSc**, Lecturer in Statistics; **Nick Black MD**, Professor of Health Services Research; **Judith Green PhD**, Reader in Medical Sociology, Department of Health Services Research & Policy, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, UK.

Correspondence to: Mary.Durand@lshtm.ac.uk

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Box 1 Glossary of terms

ICU / ITU: The critical care unit in NHS hospitals has traditionally been known as the Intensive Care Unit or Intensive Therapy Unit.

HDU beds: High dependency beds are level 2 beds, often located within the ICU, for patients who are stepping down from the highest level of care. The recommended ratio of nurses to patients is 1:2.

NHS Modernisation Agency: created in 2001 with the remit of coordinating modernization at a national level. It ran national programmes including the critical care programme. It was reconfigured in July 2005 as the NHS Institute for Innovation and Improvement.

CCDGs: The DH (2000) recommended that Critical Care Delivery Groups should be established in individual trusts so that all of the stakeholders within the acute trust could be involved in the delivery of the critical care service.

There has been increasing interest in staff perceptions of 'modernization' processes in general, with some commentators noting that resistance may hinder organizational change,[5] and calls for more qualitative research on organizational factors in critical care settings.[6] An ethnographic study by Carmel[7,8] conducted before the implementation of 'modernization' policies identified some key organizational and social features of ICUs, namely strong clinical leadership, staff identification with the unit, positive interprofessional working relationships, a focus on the technological aspects of the work and, crucially, strong organizational boundaries around the ICU. The typical ICU was not only physically separate from the rest of the hospital, within a locked ward, but also functionally separate in many ways. The objectives of the 'modernization' policy were, then, likely to have a significant impact on the traditional organization of ICUs. From being a tightly bounded organizational entity, the new vision was of 'critical care without walls'[9] extending into the wider hospital.

Although there has been some research on the impact of outreach services on working relationships between the ICU and other wards,[10] questions remain about the extent to which modernization policies could shift the traditional boundaries or 'walls' around the ICU. Our aim was to ascertain how critical care staff viewed changes to two sets of boundaries: internal ones between the unit and the rest of the hospital; and external ones, between hospitals within local networks. We were interested in the factors which were perceived to have facilitated or obstructed the development of a 'comprehensive critical care' service.

Methods

We used a multiple case study design. Seven NHS hospitals providing general adult critical care located in three clinical networks, chosen to be geographically spread across England, participated. Sites were purposively chosen to represent teaching (N = 3) and district general hospitals (DGHs) (N = 4), and critical care units ranged from eight to 27 beds, including High Dependency Unit (HDU) beds. Six sites had formal critical care outreach services.

A purposive sampling strategy was employed to recruit 45 critical care staff working in the units, in outreach teams and as allied health professionals with critical care roles (Table 1), with the aim of obtaining the perspectives of the full range of professionals delivering critical care. At each site, individuals were invited to participate on the basis of profession and time in post. The number of interviews per site ranged from two to 11. Participants' average age was 43 years (range 22 to 63 years): 28 were female, and staff had been in their current job for an average of eight years (range 1.5 to 27 years).

Individual in-depth interviews were conducted face-to-face with two exceptions conducted by phone. The interview topic guide covered: the interviewee (work history, responsibilities); perceived recent, key changes in the organization and delivery of critical care; working practices and patient care; the multiprofessional team; critical care outreach; communication and boundaries; service challenges and achievements; and involvement with local Modernisation Agency initiatives. Data analysis progressed in parallel with the interviews, the focus of later interviews being guided by themes emerging in earlier ones.

Interviews were audio-taped, transcribed in full and checked for accuracy of transcription. Transcripts were read by two members of the team. A thematic analysis was undertaken: themes were generated using both open coding of sections of transcripts from the first site and the framework of the topic guide. Emerging themes were discussed at team meetings. Theme files were created as Word documents. Agreement and divergence between both individual cases and study sites was assessed. Where key differences existed they are reported.

Study ethical approval was obtained (Riverside Research Ethics Committee), as was NHS Trust Research Governance approval at each participating site, and written consent from participants.

Table 1 Types and numbers of professionals interviewed

Professional	Number interviewed
Consultants*	11
Nurses**	20
Physiotherapists	5
Pharmacists	4
Dieticians	2
Microbiologists	1
Administrative staff	2
Total	**45**

*Intensivists and anaesthetists with critical care sessions
**Staff nurses, matrons and unit managers, critical care nurse consultants, education and improvement leads, outreach nurses

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Results

Internal walls: reframing boundaries within the hospital

The 'boundaries' around the ICU were conceptualized by interviewees as physical, professional and organizational. Physical metaphors of walls and doors were often used to represent the process of dismantling organizational boundaries:

> No, I don't think we're quite in Jericho yet [laughs]. But I think the walls have – are see through now, rather than opaque, and I think there are many more doors than there used to be… (Senior nurse, teaching hospital)
>
> We've got critical care with a door slightly ajar….[laughs]. (Consultant, DGH)

The term 'critical care without walls' was variously interpreted as: increased recognition that critically ill patients are treated outside the ICU; the presence of outreach teams on the wards; and the 'levels of care' classificatory system. While there was a lack of consensus about the degree to which critical care was becoming, or could ever become, a truly seamless, hospital-wide service, the boundaries around the ICU were both explicitly and implicitly described as less fixed. Adult critical care was viewed as no longer exclusively delivered on the ICU and improved communication and interaction with the rest of the hospital was widely reported as an indication of a service which was becoming less tightly bounded:

> Well, I think that's very much a strategic change where we no longer talk about critical care occurring in HDU or ICU beds, but critically ill patients can be presenting anywhere and throughout the hospital …. So we've had to very much take our services outside of the traditional walls of critical care. (Senior nurse, teaching hospital)

This re-framing of boundaries was associated with three principal processes and initiatives: outreach; new staff roles; and increased integration of allied health professionals.

'Opening doors': the role of outreach

Outreach was widely viewed as important in terms of its impact on faster and/or avoided admissions to the ICU, improved follow-up and fewer re-admissions. It was invariably seen as key in fostering relationships between critical care and the wards, creating a profile for the adult critical care service as more than just the ICU and its staff.

Metaphorically, outreach 'opened doors' through its perceived role as an informational conduit, informing ICU staff about ward patients and the capacity of wards to accept or manage patients, as well as serving as a messenger from the ICU to the wards.

> Well, they're [the outreach team] the eyes and ears on the wards…. For sending patients out, we refer them to the [outreach] Team and they will assess the patient for the suitability of the ward they're going to, 'cause they know the wards better than we do … they know what's going on in there… (Nurse, teaching hospital)

Outreach reportedly improved relationships by helping ICU staff to empathize with overstretched ward staff while simultaneously helping to dispel negative myths about the elitism of ICU professionals among ward staff. As such, it assumed, perhaps inadvertently, a public relations function, representing critical care to the rest of the hospital and, equally, ward staff to the ICU, thereby opening 'doors' between the two.

> … sometimes we'll get a patient in and you'll hear quite inexperienced nurses criticising the care the patient's had on the ward but, you know, my answer is, 'You've got absolutely no idea what it's like out there. You don't realise how busy it is or what pressure these staff are under.' (Senior nurse, teaching hospital)

Outreach teams also literally 'opened doors' for ward staff, by encouraging them to accompany patients to the ICU, thereby reportedly helping to quash supposed daunting images of the unit.

> But the introduction of the Outreach Team has made critical care more accessible, and it was seen as quite an unfriendly place, before, I think. And I think that, to a certain extent, has alleviated that – it was a problem really and people were frightened to come onto the intensive care unit….Well, it has the reputation of critical care nurses having this, you know, I don't know if the word is [laughs] God-like, or they're special, which is not true at all, definitely not true. (Nurse, teaching hospital)

Dismantling the walls from inside: new roles and remits for ICU staff

Opportunities for optimizing ward care, building professional relationships and raising the profile of critical care also involved direct contact between ICU and ward staff, with senior critical care nurses in particular said to be expanding their remits beyond the physical boundaries of the ICU. The evolution of the critical care nurse consultant role, for example, was viewed as beneficial not only to the development of nursing practices on the ICU but also to the rest of the hospital.

Critical care staff were also presented as having a more prominent hospital-wide educational role. Training was delivered directly from the ICU itself, as well as by outreach, as part of critical care's remit to deliver a hospital-wide service.

> The other thing is that there's much more involvement in education for critical care. Before sharing of our skills, I think it's true to say we were very mean with our critical care skills

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> [laughs]. And so the change has been – and I think this has been Outreach-led, is that we are involved in every level of education both pre-reg and post-reg. (Senior nurse, teaching hospital)
>
> We now have it that all the house officers come to us for a day before they actually start in the wards, which is great, so we have a day of indoctrinating them into our way of thinking. Then we also have virtually all the nurses in the hospital and also all the physiotherapists come to our [name] course... (Consultant, DGH)

However, resistance to the expanded remits of critical care staff included the view that outreach may inadvertently de-skill ward staff and that critical care nursing skills may be lost to the ICU as experienced staff expand their roles or join outreach.

> I just feel that where the intensive care nurse role is expanding hugely, like we've got to know so much, ... but then it seems that we're spreading our wings and then the ward nurses are being sort of being clipped... (Nurse, teaching hospital)

Transcending boundaries: integrating allied health professionals

The strong organizational boundary around critical care traditionally included primarily nursing and medical staff within it. There was evidence that this boundary had also been eroded from accounts of an expanded concept of who constituted the critical care team, and an increased emphasis on multi-professional working.

> I think one thing we have done, is we've tried to get more support specialty people involved as part of a wider, sort of, multidisciplinary team. So we have got an ITU speech therapist; we've also got an ITU pharmacist. We have a daily Microbiology ward round, to discuss all the patients ... (Consultant, DGH)

While retaining allegiances to their own profession, allied health professionals (AHPs) reported that they increasingly saw themselves, and were seen as, core members of the critical care team. They described having made a concerted effort to become involved in critical care and reported an increased appreciation by their ICU colleagues of their abilities to contribute.

> The way we work has changed dramatically and the way we operate on the Unit, and for other people in the team too, I think. ...Well, you're considered – if you're the dietician or the pharmacist, you're considered the expert, and they go to you for that, and they want that expertise, and they expect it. (AHP, teaching hospital)

The increased visibility of AHPs on the ICU or outreach team, as well as their input to patient care, guideline development, and training junior doctors and nurses reportedly helped to transcend traditional professional and territorial boundaries.

Internal walls: barriers and challenges

Despite these confident accounts of diminished internal boundaries, some doubt was expressed as to whether the concept of 'critical care without walls' could ever be fully realized. Four limiting factors were cited. First, despite the recommendation that CCDGs be established to create links between the critical care service and other relevant hospital staff, there was a reported lack of interest by managers and staff, poor leadership and a perceived paucity of financial incentives. CCDGs may therefore not have facilitated service development to the extent envisioned by policy makers.

> Well, when I first started there was one Critical Care Delivery Group meeting, and again, it fell by the wayside. I think essentially the powers that be in the hospital weren't really very interested in that. (Consultant, DGH)

Second, practical issues such as infection control and the availability of specialist equipment and staff were cited as reasons for confining critical care to physically defined areas.

> Well, you're always going to have the physical limitation. If a patient needs ventilating they need to be on the ITUs, so you are always going to have some kind of wall. (AHP, teaching hospital)

Third, a relative lack of staffing or requisite skills to manage critically ill patients on the wards, limited outreach availability and the loss of experienced nurses on the ICU to outreach, combined with recruitment difficulties in critical care, were cited as further impediments.

Fourth, remnants of a 'them and us' culture on the part of ICU staff were perceived to exist. While some assumed this would decrease as ICU staff gained exposure to the wards, others suggested a more enduring attachment on the part of ICU staff to their elite status in the hospital.

> ... what is interesting is the [ICU] folk who do work outside the unit understand the need for developing relationships. The staff who don't go outside the unit don't, and therefore find it as easy to be [sighs] not difficult, but standoffish and to maintain that, sort of, barrier that's always existed. (Consultant, DGH)
>
> I think there is always going to be a perception that critical care nurses are somehow scary. And to be honest, I think critical care nurses quite like it. Yeah. They like the fact – I know a lot of them like the fact that trainee medical staff from outside the unit are scared of them. I mean, they may deny it, but they love it. (Consultant, teaching hospital)

There were also reported limits to the enthusiasm of ward staff for greater integration between critical care and the hospital, with resistance perceived to be associated with territoriality, concerns about being told what

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to do by critical care staff, and continued fear of the technological environment of the ICU.

> I remember when we introduced Outreach, there was the initial resistance by some of the 'dyed in the wool' Consultants, you know, that they felt, well a perceived threat that the critical nurses would come in and interfere, you know, and 'how dare they', but now I think it's so well entrenched and accepted because I think they realise that without that resource, I think a large amount of the ward would collapse.... (Consultant, teaching hospital)

External walls: re-framing boundaries between hospitals

Externally, modernization aimed to bring units together into networks. In terms of the boundaries separating critical care services from each other, there were contrasting accounts of the extent to which these had existed traditionally and of how far erosion had resulted from implementation of 'modernization' policies rather than existing informal professional connections. Where successful, local critical care networks were presented as a key agent of change, playing both strategic and organizational roles in creating links between hospitals. Staff described ways in which networks were bringing services together and the potential benefits to be derived.

> ... and it also gives you a chance to get in touch with other nurses and doctors within the network, you know, and build those bridges and find out what's going on out there. So I think, as a community, as a critical care community, it's pulled all of the units together really and it gives you that support.... (Senior nurse, DGH)

In such cases, the network both legitimized and formalized contact between senior staff and, in so doing, provided opportunities for increased communication, professional relationship building, and information, resource and practice sharing. It permitted staff to look beyond the physical limits of their own hospital and encouraged a more open working culture with colleagues in neighbouring services.

The local network also facilitated joint working on projects, care guidelines and professional development and training.

> ... you know, if you were struggling here with something you could discuss it with another matron over here, and add another unit and see if they had, sort of, experience of it, so it was good... (Senior nurse, DGH)

Other perceived benefits included increased standardization of practices between hospitals and joint patient transfer procedures.

Efforts to dismantle the 'walls' between services through networks were seen to be facilitated by four factors. First, leadership was essential, with effective leaders said to possess a strong network strategy, a clear understanding of critical care priorities and enough charisma to engage and enthuse stakeholders. Second, funding (and the power to use it to benefit services network-wide) was key to success.

> But maybe I'm just being cynical, but the bottom line did seem to be that if you could actually start to draw the money flow, the funding flow, through the network then you were more likely to survive. (Senior nurse, teaching hospital)

Third, having a specific issue for neighbouring hospitals to focus on (such as difficulties in transferring critical care patients between hospitals) encouraged success.

> My impression of when networks have had a major impact, is when there's been a major problem with transfers, and they've sorted that out, and the management of transfers. Well, it's not been an issue in [local network name]. (Consultant, teaching hospital)

Finally, the continuance of networks was dependent on success and evidence of benefits. To this end, the role of network leads and representatives from hospitals in promoting the network and its achievements were crucial.

> And, of course, there is always the possibility that one acute trust [hospital] could just take its bat and go home. The network is only a success because it's a success, and as soon as we fail something, then, you know, there is always the opportunity for people to go home, with their ball and their bat. (Consultant, teaching hospital)

This erosion of external walls was not, then, inevitable and the mere existence of a network was not sufficient to achieve collaboration. Participants at some sites perceived their local network as unproductive.

> ... they met every couple of months, and basically nothing seemed to be achieved. There were no, certainly in our network, nothing was done in terms of common protocols, common transfer arrangement, nothing, but I'm, you know, I can't think of one benefit that I'm aware of. (Consultant, teaching hospital)

There was also some resistance to the notion that networks were required to bridge-build: at one site, staff intimated that local services had worked together effectively, before the establishment of the local network. Others implied a preference for historical ties and informal contact. Imposing a network that ignored existing relationships between hospitals was viewed as a recipe for failure, as was perceived territoriality on the part of individual hospitals.

Discussion

In a study involving staff from seven sites across three networks, we found that recent initiatives associated with the 'modernization' of critical care were widely

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perceived to have resulted in the re-configuration of the boundaries of critical care, both within and between hospitals. In a clinical setting traditionally associated with strong organizational boundaries, staff from a range of professional groups reported that the 'walls' of critical care were being crossed physically, organizationally and professionally in both directions to a greater extent than previously. This was most apparent in the work of outreach teams, as ICU staff diversified their clinical and educational activities into the wards, and with allied health professionals being more visibly incorporated in the ICU team.

Collaboration and team-working have been described as fundamental to success in critical care[11] and it would appear that increased opportunities for both are helping to reduce historical, territorial boundaries. Outreach not only benefits patients and supports ward staff, but also facilitates the development of a seamless service through its perceived public relations, communication and informational roles. This is consistent with the suggestion that behavioural and cultural changes may be even more important to changing health services than structural re-organization.[12]

While there was some scepticism about whether adult critical care can ever become a hospital-wide rather than a unit-based service, the concerns expressed were not framed as ideological opposition, but rather as an anxiety about the perceived lack of capacity, both practical and financial, to allow for the realization of the concept of 'critical care without walls'. It is possible that ICU staff, while they embrace the emergence of critical care as a specialty, are concerned that they and their colleagues may be spread too thinly, to the detriment of the ICU itself, as services and professional roles expand. This is supported by Dawson and Coombs'[13] finding that while experiencing an expanding strategic role, nurse consultants appear to have less involvement in expert practice than previously. Furthermore, adequate resources, including staffing, have been identified as key to achieving a comprehensive, hospital-wide critical care service.[14]

Networks have been described as key to transferring knowledge and resources across organizational boundaries.[15] Our study illustrates the ways in which local clinical networks have facilitated, or not, the development of both a new philosophy and practice of collaboration between hospitals. Factors which were believed to make networks successful included: strong leadership; adequate funding and resources; buy-in from staff; and a willingness on the part of individual hospitals to commit. Networks are more likely to be successful where there is a perceived need for them, their functional and organizational boundaries follow historical and/or existing patterns of communication and collaboration, and staff observe improvements in service delivery and professional development opportunities. This is consistent with previous research that suggested that staff support for 'modernization' initiatives developed through their experience of benefits and from the perceived attractiveness of funding and other opportunities presented.[5]

The importance of 'public relations' also emerged. This incorporates three elements: bringing individuals, teams or services together by facilitating communication, information flow and opportunities for contact; having good leadership; and trumpeting successes. The apparent 'failure' of the CCDGs which were intended to cross boundaries within the hospital between critical care and other acute services, illustrates this. Their perceived limited success may in part be due to a lack of self-promotion and a resultant inability to attract the attention of the relevant staff or simply because they were surplus to requirements. Across the hospital, outreach services and innovations such as introducing days for doctors to visit the ICU before joining the wards, had already begun to integrate critical care into the hospital. The CCDGs were unlikely to add value to this process. Similarly, networks were said to be unnecessary where there was previous collaboration between NHS trusts in a geographical area.

The strengths of this study lie in the fact that it included sites across England and that the qualitative method employed allowed for the in-depth exploration of staff perceptions of 'modernization'. A potential limitation is that while it included a range of professionals attached to critical care, it cannot shed light on how ward-based staff viewed the modernized critical care service.

Conclusions

Altering the way health care is organized is a challenge, with resistance from professionals often cited as a brake on the implementation and sustainability of innovation.[5] In contrast, in the case we have described, staff from a range of professions and settings reported generally positive views about the promotion of a seamless, comprehensive service to replace a tightly bounded ICU. Given the evidence that this tight boundary was a pivotal organizational feature of the traditional ICU, it is perhaps surprising that views about changing this were on the whole so positive and that so much progress was reported on 'breaking down the walls'. This positive perception of change resulted from a belief that innovations such as outreach and networks brought organizational and professional benefits, particularly for nursing and allied health professional staff, and that they were associated with improvements in patient care.[4]

The principal implications for transforming critical care are the need for managerial support, addressing practical issues, including resources for additional staff if services are going to expand (as occurs when establishing outreach) and confronting any existing staff

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attitudes that might jeopardise collaboration such as entrenched 'them and us' views of ICU and ward staff. While some of these factors may be peculiar to critical care provision, it seems likely that other factors may be of more general applicability when trying to transform long-established organizational practices.

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