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Pathways to professionalism? Quality improvement, care pathways, and the interplay of standardisation and clinical autonomy

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Abstract Care pathways are a prominent feature of efforts to improve healthcare quality, outcomes and accountability, but sociological studies of pathways often find professional resistance to standardisation. This qualitative study examined the adoption and adaptation of a novel pathway as part of a randomised controlled trial in an unusually complex, non-linear field – emergency general surgery – by teams of surgeons and physicians in six theoretically sampled sites in the UK. We find near-universal receptivity to the concept of a pathway as a means of improving peri-operative processes and outcomes, but concern about the impact on appropriate professional judgement. However, this concern translated not into resistance and implementation failure, but into a nuancing of the pathways-as-realised in each site, and their use as a means of enhancing professional decision-making and inter-professional collaboration. We discuss our findings in the context of recent literature on the interplay between managerialism and professionalism in healthcare, and highlight practical and theoretical implications.

Keywords: emergency general surgery, laparotomy, pathway, professionalism, managerialism, medical profession

Introduction

Quality and safety are now firmly established as priorities for healthcare systems internationally, but efforts to improve them have seen mixed results. Optimism about the potential for technical solutions has given way to recognition of the challenges of improvement in complex systems characterised by organisational cleavages, heterogeneous patient needs and preferences, and powerful prevailing professional cultures (Waring *et al*. 2016). Approaches that emphasise the importance of reducing unwarranted variation often jar with a medical-professional culture that

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valorises individual autonomy and sometimes views efforts to replace judgement with standardisation with suspicion (Martin *et al*. 2015).

One example of the conflict between managerial efforts to improve quality and professional concerns about the risks associated with such interventions is the ‘care pathway’ (also known as the critical pathway, clinical pathway or integrated care pathway). Presented as a key mechanism by which to achieve high-quality, consistent, co-ordinated care in complex healthcare systems, advocates argue that pathways offer a means of reconciling improvement and reliability with professional concerns for patient-centred care and appropriate clinical judgement (e.g. Whittle and Hewison 2007). Some pathways have precipitated improvements in patient outcomes and/or reduced costs (e.g. Simpson *et al*. 2015). Critics, however, point to the role of pathways in facilitating external surveillance of professional practice, and the potentially deleterious consequences of protocolising care at the expense of professional discretion (e.g. Pinder *et al*. 2005). There are also reports of implementation failures resulting in pathways that are little more than paper-based exercises, with limited impact on practice (e.g. Allen 2014, Rycroft-Malone *et al*. 2009).

Yet the momentum of the pathways ‘movement’ has continued largely unabated. The emergence of professional bodies (e.g. the European Pathways Association), journals (e.g. the *International Journal of Care Coordination*), and endorsements from influential authorities (e.g. NHS Improvement 2011) indicates an increasing institutionalisation of the concept. Moreover, pathways are being initiated in increasingly complex settings. Although they are best evidenced for routine care, where patient trajectories are relatively similar (Allen and Rixson 2008), new pathways are emerging in areas such as multi-morbidity (Noordman *et al*. 2015), care across organisational boundaries (Sleeman *et al*. 2015), and emergency care (Royal College of Surgeons 2011). These developments merit particular attention. Sociologically informed studies of the enactment of care pathways remain relatively rare (exceptions include Allen 2014, Hunter and Segrott 2014, Pinder *et al*. 2005), and the challenges associated with implementing pathways in areas of clinical heterogeneity and organisational complexity might be expected to heighten concerns around their potential adverse consequences for care quality and professional autonomy. To date, many studies have focused on the views of professionals on pathways in principle without examining their realisation in practice (e.g. Bjurling-Sjöberg *et al*. 2013, Pearsall *et al*. 2015, Sleeman *et al*. 2015). Cognisant of Berg’s (1997: 1082) caution that debates about the pros and cons of efforts to standardise can become removed ‘from the actual practice of constructing and using protocols’, we focus on the adoption, adaptation and use of a novel pathway in an organisationally, clinically and professionally complex field. We ask: how did those charged with pathway implementation seek to reorder care; how did these attempts interact with incumbent professional expectations about the proper treatment of patients; and with what results for the way care was delivered? Posing and answering such sociologically informed questions is crucial to assessing the prospects of pathways for reconfiguring care, as well as providing insight into the broader relationship between managerial interventions and professional cultures, a fruitful area of sociological inquiry in recent years (e.g. Martin *et al*. 2015, Noordegraaf 2016, Numerato *et al*. 2012).

Our empirical setting is emergency intra-abdominal surgery (laparotomy), a field characterised by variability in processes and outcomes that have made it a target for improvement intervention. We examine the introduction of an emergency laparotomy pathway in six hospitals involved in a wider stepped-wedge randomised controlled trial. Our findings highlight tensions between standardisation and differentiation for this heterogeneous population, and professional concerns about the risks to high-quality care that might arise from pathway implementation. But we also find synergies between professionalism and managerialism, of a kind not previously found in studies of pathways, protocols and similar technologies of change.

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After further examining the sociological literature on pathways in the next section, we consider emergency surgery more specifically, including the clinical background and the emergence of a pathway-based response to poor outcomes and unwarranted variation in quality. After accounting for our methods, we proceed to present and discuss our findings, highlighting implications for theory and practice.

Care pathways

The care pathway exemplifies a particular kind of response to problems of quality and safety that has become dominant over the last 20 years. Defined as 'a complex intervention for the mutual decision-making and organisation of care processes for a well-defined group of patients during a well-defined period' (Schrijvers *et al*. 2012: 1), it aims to provide an agreed-upon sequence of interventions based on evidence or consensus, to allocate responsibility for these across staff, and to document care as it happens. Care pathways originated in managed care in the United States in the 1980s (Hunter and Segrott 2008), and rose to prominence in the United Kingdom as part of the clinical governance agenda, frequently led by the nursing profession (Allen 2009). Their ethos, however, can be traced to the scientific management of Frederick Taylor and Henry Gantt (Pinder *et al*. 2005). Care pathways might thus be understood as an early example of the translation of ideas from other industries into healthcare improvement, a precedent followed by approaches such as Lean and Six Sigma (Nicolay *et al*. 2012).

Central to the form taken by a pathway, distinct from other instruments for improving care, is its high degree of specificity in terms of sequencing, timing and responsibility for care. Pathways are more than simple clinical guidelines: they are prescriptions for who should do what, when and where. Pathways act as co-ordination mechanisms that can reconfigure responsibilities for patient safety, provide a record of care for each patient, and demonstrate local compliance with regulatory guidelines (Allen 2009).

The manifest function of pathways, as a locally sensitive response to demands for improvement, has led some to characterise them optimistically as 'a fortunate fusion of managerial and professional concerns' (Whittle and Hewison 2007: 305) through which clinicians and managers are 'joined in a common cause in modernizing health care' (Allen 2010: 7). They have been presented as a relatively successful, widely adopted innovation that aligns professional values, administrative interests and political concerns (Greenhalgh *et al*. 2004). Others, however, are more circumspect about their potential, for conceptual and empirical reasons.

Conceptual critiques focus on the technical-rational mentality that pathways are claimed to embody, which prioritises auditable aspects of care and permits managerial scrutiny of professional decision-making. Their focus on ensuring that each patient receives every component of care indicated for her diagnosis has led some to argue that they replace clinical judgement with rules-based 'cookbook medicine', to the detriment of patient-centred care (Pinder *et al*. 2005). While they should permit appropriate deviation, the use of pathway documentation for the purpose of identifying and addressing 'variances' – that is, issues of non-compliance – means that clinicians may be reluctant to deviate from what is prescribed (Allen 2010). As Hunter and Segrott (2008: 621) put it:

> This neat resolution of the tension between standardisation and individualised care places responsibility for quality of care firmly in the hands of practitioners – and leaves nurses and midwives with an uncomfortable paradox to manage.

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All in all, their combination of prescriptiveness and auditability means that pathways exemplify the tension between managerial and professional logics of healthcare delivery (Martin *et al*. 2015).

Empirically – and partly in consequence of these conceptual challenges – researchers have found that, notwithstanding notable successes (e.g. Simpson *et al*. 2015), pathways do not always have the transformational impact anticipated. Examining the development of a mental-health pathway, for example, Allen (2009) found that disagreements about the evidence base, along with ongoing concern for the importance of clinical judgement, resulted in a document that looked more like a malleable set of recommendations than a precise, prescriptive pathway. Where prescriptive pathways are successfully produced, the literature often finds professional resistance (Bjurling-Sjöberg *et al*. 2013, Rycroft-Malone *et al*. 2009, Sleeman *et al*. 2015), premised on pathways' potential to replace judgement with unreflective rule-following. Most studies have focused on the development of and reactions to care pathways, but those that have considered their implementation find that a disjuncture between care-as-practised and care-as-documented can result. For Allen (2014: 819):

> Rather than providing a bridge between centralised and local control and clinical and organisational worlds, this failure to enrol key actors in their use creates an external appearance of transparency and standardisation, while preserving a realm of autonomy for medical staff.

Essentially then, pathways and their implementation may entrench, rather than mediate, the distance between managerially and professionally driven approaches to quality improvement.

Nevertheless, pathways continue to proliferate, and notwithstanding these critiques, there is evidence for their efficacy in improving compliance with care processes, particularly in contexts 'where patient care trajectories are predictable' (Allen and Rixson 2008: 80). 'The suitability of pathways for complex, unpredictable conditions', however, 'where care exhibits variability, is less certain' (Hunter and Segrott 2008: 613). Intriguingly, outside routine and/or elective contexts, the arguments both for and against care pathways intensify. Advocates point out that variation in processes is often greater, and consequently outcomes are often worse. Critics reply that at least in part, this reflects a more heterogeneous patient population – and this population requires care that is tailored, not Taylored. These were exactly the debates that were in train in the empirical setting examined in this article: emergency surgery.

Emergency surgery

Emergency general (abdominal) surgery has been characterised as an area that, despite high volume and high risk, has been neglected by recent efforts to improve care quality. Whereas elective surgery has been the focus of clinical and policy attention, and the setting for many improvement initiatives (e.g. Simpson *et al*. 2015), emergency surgery represents a 'Cinderella service' in many hospitals, allocated fewer resources and given less priority (Association of Surgeons 2007). The result is high mortality rates following emergency surgery, and variation in outcomes in the UK and internationally (NELA 2015, Pearse *et al*. 2012).

These poor outcomes reflect the characteristics of the patient group: a predominantly older population, often frail and with multiple comorbidities. But evidence increasingly indicates that variation in outcome cannot be accounted for by differences in case mix alone, suggesting instead associations with key processes of care (Clarke *et al*. 2011). It was in this context that the Royal College of Surgeons (2011) assembled a set of evidence/consensus-based standards for emergency surgery and, with the Department of Health, made recommendations for

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implementing these standards – including a central recommendation that 'Trusts should formalise their clinical pathway for this group' (Royal College of Surgeons and Department of Health 2011: 7).

The College's recommendations covered pre, intra and post-operative care, and thus had implications for a range of clinical disciplines – most notably surgery, anaesthesia and critical care – as well as the co-ordination of responsibilities among them. To achieve change, any pathway would thus have to incorporate a large number of decision points, and engage a wide range of clinicians. Much emergency surgery occurs out-of-hours – over the weekend or at night, when clinical and managerial capacity are lower – and so the pathway would need to address extra challenges of resourcing and co-ordination. The report left it to 'organisations and commissioners to decide how the standards will be achieved' (Royal College of Surgeons and Department of Health 2011: 13), but they were assisted in this process by the newly launched National Emergency Laparotomy Audit (NELA 2015), by the work of opinion leaders and early adopters, and, in 2014, by the launch of a major national study, the Enhanced Peri-Operative Care for High-risk patients (EPOCH) trial, focusing on emergency laparotomy surgery, in which 90 of the UK's acute-hospital organisations participated.

Setting and methods

EPOCH was a stepped-wedge cluster-randomised trial of a quality-improvement programme to improve uptake of a 37-point pathway for patients undergoing emergency laparotomy surgery. Teams from each participating hospital, including leads from surgery, anaesthesia and intensive care, were introduced to the model pathway and trained in established quality-improvement methods such as the Institute for Healthcare Improvement's Model for Improvement, with follow-up meetings and individualised support for leads.[1]

While the EPOCH care pathway and the package of quality-improvement training and support were crucial to the approach taken in the trial, our focus in this article is on the way the model pathway was apprehended, adopted and adapted by the teams in the participating hospitals: the local work to make the pathway work. Local teams had leeway in implementing the pathway. They were actively encouraged to be judicious in deciding which nodes to prioritise, although six – sepsis prophylaxis and treatment, timely access to surgery, pre-operative mortality risk assessment, goal-directed fluid therapy, reassessment of mortality risk post-surgery, and post-operative admission to critical care – were highlighted as particularly important in improving care.

In focusing on pathway-implementation activity in the participating hospitals, we draw on an ethnographic sub-study included in EPOCH, which used a range of methods – interviews, observation of site-level meetings and forums, and documentary analysis – to shed light on the translation of plans into practice. It focused on a theoretically informed sample of six trusts, selected for maximum variation in size, teaching-hospital status, pre-trial surgical mortality, and clinical leadership, each from a different cluster (and thus geographical region).

Data collection focused on the implementation process, capturing key nodes of decision-making, factors affecting implementation, actors involved, the implementation strategies chosen by leads for EPOCH, and how these were received locally. Leads tended to be local enthusiasts for improvement, and were all consultant-level physicians and surgeons, but beyond this they had little formal responsibility for service change: of the 17 leads across the three disciplines in the six sites, only four were in managerial positions (e.g. clinical director; head of service). Interviewees and those observed included not only those responsible for pathway realisation, but also medical, surgical and nursing colleagues in each site, including those in

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managerial roles. Across all sites, we undertook 53 interviews and 216 hours' observation, though quantities varied between sites (largely due to the staggered start dates, which followed the activation of different trial clusters) from a maximum 20 interviews and 54 hours' observation (Site 2), to a minimum four interviews and 18 hours' observation (Site 6). All interviews were digitally audio-recorded, and fieldnotes recorded in a diary during observation, or shortly afterwards. Interview recordings, fieldnotes, and within-team debriefs discussing the data were then professionally transcribed. Analysis was based on the constant-comparative method (Charmaz 2007), informed by sensitising concepts arising from the literature. GPM read all transcripts line-by-line, applying 'broad-brush' codes initially to excerpts relating to pathway realisation, and in the process developing a more refined coding framework which was then applied to these excerpts. Further iterative coding followed, involving merging, disaggregating, and creating new codes, before a final round of coding that organised the data into the narrative format presented in this article.

Findings

We present our findings under three headings. First, we recount participants' views of the current state of emergency surgery, noting agreement about the problems, and about the potential of pathways as a solution. Next, we describe how in practice, the ethos of standardisation faced resistance – but a resistance founded less in an unreconstructed defence of autonomy than in concern for the potential unintended consequences of implementation efforts. As we discuss third, however, this resulted not in a rejection of the pathway or a mismatch between paper and practice, but in work to reconcile implementation of evidence-based standards with appropriate professional judgement – in which the pathway itself was a critical aide.

Disciplining emergency surgery: current practice and the potential of the pathway

Almost universally among participants, there was consensus that standards in emergency general surgery could be improved, and broad agreement with the diagnosis of the Royal College of Surgeons and others about what was needed. Participants saw emergency surgery as a 'Cinderella' discipline, characterised by a malign combination of professional, policy and organisational neglect. For organisations, income, incentives and improvement efforts had focused on elective work:

> The whole system is driven towards elective care, [which] is all driven about efficiency and doing things about the highest occupancy you can and the highest capacity that you can. (Consultant intensivist and EPOCH lead, Hospital 6)

> We've done enhanced recovery, minimally invasive day case surgery to the nth degree in the elective setting, and done nothing to help improve the outcome of people undergoing emergency unplanned abdominal surgery. (Consultant surgeon, Hospital 2)

For surgeons and anaesthetists, emergency work usually lay outside their area of interest and specialisation, an undesirable add-on at the margins of their activity:

> Emergency surgery is often seen as being a necessary evil that we have to do as part of our work. [...] A lot of [surgeons'] interest is on the minor technical challenges, and I think that is the crux of our difficulty in moving general emergency surgery forward. (Surgical registrar, Hospital 2)

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> Should the guy who does the bariatric and the gall bladders be doing the colorectal stuff? [Surgeons] are becoming single-organ doctors the same as the physicians have done, they are becoming so specialised. Open an abdomen and often you don't know what you are going to find; once they are open they have to get on with it. [...] You can be bounced into decisions that you wouldn't have made in a different situation. (Consultant anaesthetist and EPOCH lead, Hospital 3)

The inherent characteristics of emergency abdominal surgery itself compounded the challenge. This was work that took place at the fringes: unplanned, often out-of-hours, undertaken with haste, for gravely ill patients. Participants acknowledged that under such circumstances, they themselves had made errors of commission or omission that they regretted:

> Unplanned interventions are chaotic by definition. You're not expecting the patient to turn up, they turn up and they're unwell, and there are multiple things need to be sorted out all at once, with the endpoint being you get them on an operating table, and then the anaesthetist will say to you, 'Do you realise your patient's not been cross-matched?' Or, 'Do you know there's no clotting on this patient?' Or, 'Do you realise that they're anaemic and their haemoglobin is only seven?' And you go, 'Shit, no I didn't; I should have known that'. (Consultant surgeon, Hospital 2)

Together, these circumstances resulted in what some participants presented as an exceptionalist attitude towards emergency surgery. Whereas elective work was characterised by the rigorous application of specialist skills and an expanding scientific evidence base, emergency work was sometimes seen as a matter of heroism and individual ingenuity in the face of daunting challenge. In elective surgery, adverse outcomes were unusual, and taken seriously. In emergency surgery, patients were sicker, non-intervention was an unpalatable option, and so success was lauded – and correspondingly, failure was accepted, perhaps nihilistically, as an inevitable and not-infrequent occurrence.

> With emergency work, [...] the expectation is that it is going to go badly, and if you do well, then you have done all right. So I think there is that mentality, which is why sometimes people view it as an emergency that has already happened: 'I am just trying to pick up the pieces', rather than, 'I can materially impact on this'. (Consultant intensivist, Hospital 6)

The peculiar characteristics of emergency laparotomy surgery, then, were well acknowledged by participants. But recognition of the field's distinctiveness did not translate into a sense that the principles of standardisation and tools of improvement were not applicable. At the presentations and implementation meetings we attended across the sites, we discerned little resistance to the notion that quality needed to improve, or that a pathway was an appropriate way of achieving this. Rather, for many participants, the distinctive characteristics of emergency surgery made it all the more important that the principles embodied in the pathway were instilled. If surgeons and anaesthetists were operating outside their comfort zone, on a high-risk patient group, in suboptimal conditions, then the instruction offered by a pathway could provide a beneficial cognitive aid. And if some viewed emergency patients as beneficiaries of heroic acts of rescue by maverick surgeons, rather than of dull, evidence-based consistency, the pathway could act as a useful corrective:

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Participant: There *is* something different in emergency surgery, but I think the other thing with emergency surgery is the fact that it is done by people with variable expertise.
DK: Or perhaps expertise elsewhere?
Participant: Elsewhere than in the emergency laparotomy scenario, which is where I think the process becomes even more important – because nobody is going to become an expert in emergency laparotomy. (Consultant anaesthetist and EPOCH lead, Hospital 4)

> When people are in a stressful situation or if they're tired or if there are lots of other pressures going on, [...] checklists are a safety mechanism and can really help in that situation. So that is what EPOCH does to a degree. [...] Everybody has bought into it. (Consultant intensivist, Hospital 2)

Thus the pathway was largely welcomed in the six sites, by those implementing it and those affected by it alike: first, in line with thinking in improvement science, as a means of overcoming human cognitive fallibilities and improving reliability; and second, as a means of normalising the care of a 'forgotten group' (Royal College of Surgeons and Department of Health 2011) that had been viewed fatalistically, reconstructing it as amenable to high-quality, evidence-based care:

> It is making them a kind of cohesive group, if that makes sense. This is a laparotomy patient, these are the recognised guidelines, and this is what we want to deliver. (Intensive-care registrar, Hospital 4)

The limits to standardisation

The warm reception for the care pathway did not, however, translate into straightforward realisation of all its recommendations. The length of the pathway meant that site leads were selective about which elements to prioritise, but even then, they found implementation challenging. On a practical level, few of the activities included in the pathway could be enforced. Several sites devised 'boarding passes' (Richards *et al*. 2016) that were to be completed prior to surgery, so that in principle, all necessary pre-operative processes were undertaken and recorded before entering the operating theatre. In practice, however, rates of compliance were mixed, because of the need for flexibility, and a reliance on human intervention:

> At [one hospital] we have very little use of the boarding pass and at [another] we have quite a high use of this boarding pass. They discovered there is no administrator at [the first hospital] and there is this lady [at the second hospital] who doesn't mind standing up to the consultant and saying, 'Look, I can't let you book your theatre unless you do this', so they have improved compliance with boarding passes at one site and not the other. And then they decided to scrap the whole bloody thing and devise a checklist instead. (Ethnographic debrief)

Intra-operative components were even harder to ensure: what happened while the patient was on the table remained the exclusive purview of the surgeon and anaesthetist, and while it could be audited *ex post*, it could not be enforced prospectively. Post-operatively, success in securing access to intensive care following surgery was easier in some hospitals than others, with bed availability varying markedly between sites.

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In practice, then, some pathway nodes were realised more readily than others. Yet this could not be characterised primarily as down to a generalised professional recalcitrance in the face of an improvement effort. Rather, it reflected the heterogeneity of pathology, severity and urgency encompassed in this outwardly monolithic 'forgotten group' of emergency laparotomy patients, and the ethical quandaries arising from this heterogeneity. The need to improve this group's care was recognised, and the validity of a pathway as a means of achieving this was accepted. But equally, clinicians saw that some of the components of the pathway were likely to be more valuable for some patients than others:

> If someone is not very sick – they need a laparotomy but they are not very sick – one of the things that we required as part of the initial boarding card was to do an arterial blood gas, including a lactate. Now for a young person who doesn't appear unwell that is quite a painful procedure, and a lot of the surgical team were very reluctant to do a painful procedure on somebody if they didn't think it was really, absolutely urgent. [...] Perhaps we haven't managed to emphasise the importance of getting everything done regardless. (Foundation-year doctor, anaesthesia, Hospital 5)

> *[Describing a recent emergency laparotomy:]* The correct process happened for this man, and there was no delay either in doing an unnecessary CT or in delaying him going up to theatre. [...] So in theatre he got his goal-directed therapy, [but] I didn't do the P-POSSUM[2] because quite frankly I didn't have time. I can't be doing a sum when he is trying to die in front of me – I was literally bolusing adrenaline and telling people to move. So for me that was impractical. (Consultant anaesthetist, Hospital 2)

The standardisation embodied in the care pathway represented an 'epidemiological' approach to a varied patient group. Where clinicians judged that following the pathway would do more good than harm for the patient in front of them, they acquiesced to it, but this was more frequently the case for some nodes than others.

More vexing dilemmas arose where following the emergency laparotomy pathway would have implications for other groups in a resource-constrained environment. This was most sharply apparent in the node requiring that patients with a mortality risk of 5% or greater be admitted to critical care. For an individual patient, the negligible risk of harm arising from critical-care admission was likely to be heavily outweighed by the potential for benefit. However, in most sites, critical-care beds were at a premium:

> Bed availability. If we're saying that all these patients – there may be a small amount of them that are quite straightforward and they would go into intensive care, but just to say that everybody will get an intensive-care bed, when indeed maybe there aren't any, and the patient is not that sick, maybe that would be another problem. (Consultant intensivist, Hospital 1)

> If we think a patient needs to go to ICU we will just keep them ventilated in theatre until an ICU bed becomes available, so we don't actually let that compromise the care of the patient immediately post-op. It might compromise someone already in ICU who might get shunted down to a dependency area. (Consultant anaesthetist, Hospital 4)

Thus whatever the potential benefits for an individual patient of default admission to intensive care, these had to be weighed up against the needs of other patients – and clinicians fiercely defended their responsibility for making such ethical judgements.

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Pathway professionalism: reconciling managerial and professional logics
Accordingly, through time, there was a discernible shift in the approach taken to implementation. Standards that local teams had initially sought zealously to enforce were relaxed; the pathway was discussed less in terms of 'implementing policy' and more in terms of 'providing prompts' (as exemplified in the shift from 'boarding passes' to more advisory 'checklists' noted in the debrief quoted above).

> Sometimes, if the hospital has been full and they haven't been able to shift patients out of [intensive care], we haven't been able to move patients into the unit. If a patient absolutely needs ITU care afterwards they will get it, but they'll often be transferred out the hospital afterwards to achieve it. If it's HDU-level care but could probably cope on the ward, we'll admit them to the ward with augmented care. (Consultant anaesthetist, Hospital 2)

For contentious pathway components, the phrasing in documentation was adapted to accommodate reasonable professional discretion, and the language of leads shifted from implementation to recommendation.

Yet crucially, this softening of some pathway components was accompanied by a renewed emphasis on others. Again, this is perhaps best illustrated with regard to the pathway's requirement that patients be admitted to critical care by default where mortality risk was 5% or greater. Clinicians' resistance to such an automatic entitlement, given the competing needs of other patients, meant that in all but one site (where intensive care capacity was less constrained), efforts to implement this component of the pathway were abandoned. Simultaneously, however, local leads gave extra attention to a connected component of the pathway: pre and post-operative mortality risk assessment, using a validated instrument such as P-POSSUM. This proved to be one of the most consistently implemented components of the pathway. In part, this was down to its ease of use. Leads explained how their colleagues had been willing to adopt it partly because it could be downloaded as a phone app and took only moments to complete. But more importantly, carrying out a risk assessment also served a clear instrumental purpose – and one that aligned with professionals' own normative views on what a clinical decision-making process should look like:

> Participant: I think [P-POSSUM] clarifies it. Because if somebody rings me up and says, 'I've done a laparotomy; I need a bed', it's quite difficult to get that phone call at three in the morning. So you say, 'Well I don't know, do you need a bed? Based on what?' 'Oh, I think, I think they need a bed'. Well it's a bit of a vague conversation, isn't it? Whereas if you can say the P-POSSUM score is this, they're this age, this is their physiology. Well that fits them into Category One, therefore we need to do this.
>
> DK: How does it work when you have, I don't know, three Category Ones coming to you, and one bed?
>
> Participant: That's our problem to deal with. So everybody who needs a bed will end up with a bed eventually, or a plan eventually. And that's not for the surgeons or anaesthetists to have to deal with. (Consultant intensivist, Hospital 4)

Rather than deploying mortality risk assessment in a crude, algorithmic manner – if $P \geq 5\%$ then admit to intensive care – participants viewed P-POSSUM and similar components of the pathway as a means of informing and improving their judgements about the allocation of finite resources:

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> Formally, on our [pathway] chart, if you have got a risk of greater than 5% that is supposed to be our trigger [... to] go to HDU or ITU, and below that is a grey area that you could go if the anaesthetist wanted you to go. But I think it is a sort of trigger for the team to be aware of the risk of the surgery, or of how dangerous the surgery is, and how proactive we should be in managing it. So if you are a SHO [junior doctor] or somebody who is clerking a patient in and they have worked out the P-POSSUM and they go, 'Oh blimey, 50%', or whatever, then it might mean they take it more seriously and expedite things a little bit more. (Consultant anaesthetist, Hospital 5)

This shift might be interpreted as a retreat from the logic of the pathway as usually understood in the sociological literature, with its emphasis on ensuring compliance with good-practice standards. Yet for participants, the nodes in the pathway that sought to improve professional practice, rather than enforce change, had tangible impact. For one thing, they prompted a more considered approach to decision making than had previously predominated:

> [Describing the predominant approach to risk assessment prior to the pathway's introduction]: We're really bad at risk stratification, it's all done by a seat-of-the-pants thing, feeling in your bones or in your water: everybody does it that way. So I think that is an issue. P-POSSUMs are not being used, nothing.

> [In a later interview, the same participant describes the impact of introducing P-POSSUM on professional practice]: For a lot of people who aren't interested in perioperative medicine and postoperative care, it gives them something that they can use. [...] They are not in the nitty gritty of the major GI work or vascular work or some of the sicker patients that come through the system, except when they are on call. So for some of them having a system where you could just plug in some numbers and have a look, it might be useful. (Consultant intensivist and EPOCH lead, Hospital 3)

> One of the main ones is prompting a more formal conversation between the anaesthetist and the general surgeon, in terms of making a more clear decision at the end about where the patient is going and management and so on. Because historically we as surgeons would finish a laparotomy and often leave the operating theatre to write the operation notes, and then often the consultant would leave and the registrar might come back to see what is going on, but often you would then just leave the patient to see where they filtered to, find out the next morning where they had gone. Whereas this now, getting us into more of a culture of: 'Is this patient high risk? Should they go to intensive care? What is our plan of management? Do we extubate?' Those kind of things are conversations I think we should have, and in a way it is good to force us into that'. (Surgical registrar, Hospital 2)

For another, they could improve the dynamics of multidisciplinary decision-making by facilitating inter-professional communication about ethically vexed decisions. P-POSSUM and similar tools presented by the pathway offered a 'common currency' that allowed previously incommensurable priorities – such as access to scarce resources like critical-care beds and theatre space – to be weighed against each other, in a more transparent and open manner:

> It would empower some of the more junior members of our staff to get senior support. Because it is much easier if you have assessed it, and the issue is whatever percent mortality/morbidity, to get help. (Consultant intensivist, Hospital 3)

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> For someone co-ordinating theatres, [. . .] if you start using a common language you don't have to have the sub-specialist knowledge to know what the risks would be for a perforated duodenal ulcer, for example, compared to a hemicolectomy, they are a Category One emergency laparotomy patient. [. . .] It will make the process more straightforward because you are simplifying it. (Intensive-care registrar, Hospital 4)

Decisions that had previously been arbitrated through seniority or force of personality thus could now be resolved in a fairer way – but one that rested on better informed deliberations, rather than universalistic rules of access. An emphasis on undertaking risk assessment, and other pathway components that increased the quality of available information to enhance judgement, helped render decisions throughout the pathway subject to a more considered, reflective approach:

> The surgical team now are much better at telling us about cases in advance. [. . .] There is a bit more thought process behind that, rather than 'I just need to cut them'. If you actually try to define it, it is actually quite difficult. It is more that global sense that people have actually thought a bit about it, and actually know that there is a slightly different aim from just getting in there and doing it. In some respects it is quite soft, but it is a change'. (Consultant anaesthetist, Hospital 6)

Discussion

In an area characterised by complex decisions and a heterogeneous patient population, our findings indicate an enthusiasm for a pathway-based approach that is perhaps surprising given the existing sociological literature, across the clinicians whose practice the pathway affected. The challenges specific to emergency laparotomy, such as its marginality at a time of increasing surgeon specialisation and the neglect of a 'forgotten group' of patients, were seen as necessitating the standardisation that a pathway might achieve. But while a pathway might help raise the profile of these patients and focus clinical minds on the need for reliable application of agreed standards of care, clinicians were also conscious of the limitations of standardisation for what was in fact a heterogeneous population, and the risks posed by a protocolised approach to determining access to scarce resources. Accordingly, those responsible for realising the pathway moved through time from a logic of implementation – ensuring compliance with each node – towards a focus on those aspects of the pathway that had an indirect impact on quality of care, by informing professional judgement rather than sidelining it.

Apparent, then, was a rather different approach to realising the objectives of the care pathway from that assumed in the literature. But this could not be characterised as an implementation failure due to resistance or non-compliance (e.g. Bjurling-Sjöberg *et al*. 2013, Rycroft-Malone *et al*. 2009, Sleeman *et al*. 2015). The pathway as a whole, and the standards it advocated, remained a crucial aspect of the change process. The pathway provided a reference point about what should ideally be provided in the absence of competing claims to resources, and guided surgeons, anaesthetists and intensivists in their real-world trade-offs between patients' needs. The critical nodes in the pathway – those which leads focused on and their colleagues seemed most receptive to – were the ones that informed rather than instructed: they reinforced professional sovereignty in decision-making rather than overriding it. For those who view pathways as a means of implementing evidence-based care and maximising professional compliance, this might be characterised as a failure. As others have pointed out, however

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(Berg 1997, Dixon-Woods *et al*. 2011, Martin *et al*. 2014), an intervention's *modus operandi* in practice may not match its theory; it is important to understand how interventions really work if we are to adequately assess their value, potential, and how they might be optimised. Our findings suggest that, utilised in a reflexive, nuanced manner, pathways may have potential in championing and improving quality even outside the relatively linear, predictable patient groups and routines for which they were originally devised. This was underwritten by the approach taken by the core EPOCH team, which presented an evidence and consensus-based pathway, provided training in quality-improvement tools to help to achieve it, but left to the discretion of local teams the question of what components to prioritise, and how to realise them.

This more subtle approach to realising the pathway was more compatible with professional norms, and avoided creating the tension between pathway recommendations and professional autonomy that led to the rejection of pathways identified by authors such as Hunter and Segrott (2008), Pinder *et al*. (2005) and Allen (2010). More broadly, it also exemplifies a novel form of interaction between professional and managerial logics of care of a kind intimated in the recent literature on the sociologies of professions and organisation (e.g. Numerato *et al*. 2012). Conventional understandings of care pathways find, at best, an uncomfortable accommodation between managerial and professional logics. Pathways present interventions that should, by default, be enacted; insofar as they permit professional dissent, this must be carefully accounted for and documented (with attendant risks for those daring to deviate from the pathway's prescription) (see Hunter and Segrott 2008, cf. Whittle and Hewison 2007). The logic of managerialism dominates; the space for professionalism must be demarcated on a case-by-case basis. Numerato *et al*. (2012: 637) contend, however, that not all interactions between incumbent professional logics and ascendant managerial logics can be incorporated into this 'hegemony/resistance framework', and call for further research on examples of interaction between the two logics that transcend this epistemological heuristic.

We suggest that the emergency laparotomy pathway as put into practice in our case-study hospitals represents an example of such an interaction, and offers intriguing implications for their potential to transcend the limitations of both professional and managerial approaches to the organisation of high-quality healthcare. Rather than leaving it to individual practitioners to negotiate any conflict between their professional judgement and the pathway's prescriptions, these issues were addressed head-on in the way leads adapted the pathway to their organisations. What emerged were pathways-in-practice that, while still offering good-practice prescriptions, deferred to and valorised situated professional decision-making in the face of real-world ethical dilemmas – but also sought to improve the quality of that professional decision-making by encouraging the generation and use of supplementary information that could give rise to better judgements and better interactions among professional groups. They provided a means of enhancing what Evetts (2002: 345) calls professional discretion (as distinct from professional autonomy):

> Professional discretion enables workers to assess and evaluate cases and conditions, and to assert their professional judgement regarding advice, performance and treatment. To exercise discretion, however, requires the professional to make decisions and recommendations that take all factors and requirements into account. These factors and requirements will include organizational, economic, social, political and bureaucratic conditions and constraints. Thus, professional decisions will not be based solely on the needs of individual clients, but on clients' needs in the wider corporate, organizational and economic context.

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In other words, in focusing on nodes that informed, such as risk assessment (rather than nodes that instructed, such as access to intensive care), the realisation of the pathway allowed professionals better to account for the range of considerations that should inform their decisions. In this process, it transcended both managerialism and professionalism as traditionally constructed. It reconstructed the needs of the emergency laparotomy patient as a shared concern for multiple disciplinary groups, and created space for better, conjoint decision-making that better accounted for competing needs in resource-constrained environments.

As Noordegraaf (2015) has argued, such a reimagining of professionalism – which he labels 'organising professionalism' – is crucial given the changing needs of patients and the possibilities that derive from new technological developments. Realising the potential of improved standards of care optimally and equitably requires not uni-professional autonomy but inter-professional co-operation, so that:

> Instead of isolating professional practices from outside worlds, professionalism becomes connective. Professionals are still experts, but they are able to link their expertise to (1) other professionals and their expertise, (2) other actors in organizational settings, including managers and staff, (3) clients and citizens, (4) external actors that have direct stakes in the services rendered, and (5) outside actors that have indirect stakes. (Noordegraaf 2015: 201)

This implies neither a subordination of professionalism to managerialism's call for standardisation and transparency, nor an insulation of professional judgement from the excesses of managerialism. Rather, it suggests the need for a means of transforming professionalism so that it might better connect with the societal and technological shifts that underlie (but are only mechanistically applied through) managerial interventions (Martin *et al*. 2015, Noordegraaf 2016). We see in the realisation of the emergency laparotomy pathway some clues as to how such connectivities, and this promise of 'organising professionalism', might be achieved.

Conclusion

Previous sociological studies of care pathways highlight resistance, but few of these have examined the realisation of pathways in clinical practice. Our study suggests that rather than simply imposing a managerial order or being resisted by clinicians eager to defend their professional autonomy (Numerato *et al*. 2012), pathways-as-realised can fuse managerial and professional skills in a way that is sympathetic to, and even enhances, appropriate professional discretion in areas of ethical judgement, while also laying out appropriate standards of care. Adapted appropriately, pathways can thus be more than a negative boundary object (Allen 2014). The emergency laparotomy pathway we studied was unusual in that its primary subjects were physicians and surgeons rather than nurses; these clinicians may have had greater leeway to make the alterations to the logic of the pathway we found. Additionally it should be noted that many of our participants were actively engaged in the EPOCH programme, as local leads and translators of the pathway from paper to practice. Our study nevertheless highlights the nature of the approach needed to move pathways from paper to practice, and the potential for enriching professional practice that might follow.

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Supporting information

Additional Supporting Information may be found in the online version of this article:

Appendix S1. List of contributors to the EPOCH trial.

Notes

1 Further information on the trial and quality-improvement approach is available at www.epochtrial.org.

2 Portsmouth Physiological and Operative Severity Score for enUmeration of Mortality and morbidity, a risk assessment tool recommended in the EPOCH pathway to guide decisions about intra- and post-operative interventions.

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