Doctors' thinking about 'the system' as a threat to patient safety

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ABSTRACT 'Systems thinking' is an important feature of the emerging 'patient safety' agenda. As a key component of a 'safety culture', it encourages clinicians to look past individual error to recognize the latent factors that threaten safety. This article investigates whether current medical thinking is commensurate with the idea of 'systems thinking' together with its implications for policy. The findings are based on qualitative semi-structured interviews with specialist physicians working within one NHS District General Hospital in the English Midlands. It is shown that, rather then favouring an individualized or 'person-centred' perspective, doctors readily identify 'the system' as a threat to patient safety. This is not necessarily a reflection of the prevailing safety discourse or knowledge of policy, but reflects a tacit understanding of how services are (dis)organized. This line of thinking serves to mitigate individual wrongdoing and protect professional credibility by encouraging doctors to accept and accommodate the shortcomings of the system, rather than participate in new forms of organizational learning.

KEYWORDS *discursive regimes; medical culture; patient safety; systems thinking*

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Introduction

'Patient safety' has emerged as a global health policy priority (World Health Organization, 2004). In the USA it has been shown that as many as 98,000 people die every year as a result of clinical error and mistake (Brennan and Leape, 1991). Like other health care systems, the National Health Service (NHS) of England and Wales is not immune to the risks and errors that threaten the safety of patient care. It has been estimated that one in ten hospital patients experience some form of clinical error, and on an annual

basis there could be as many as 850,000 of these events, costing the health service over £2 billion in additional care (Department of Health, 2000; Moore, 2000). The policy agenda currently being implemented across the NHS aims to enhance the safety of patient care by establishing a new logic and approach to organizational learning. Led by the newly created National Patient Safety Agency (NPSA), this involves the introduction of a service-wide National Reporting and Learning System (NRLS), which is designed to gather information about the threats to safety, thereby enabling both local and national service leaders to identify the 'root causes' of danger and the opportunities for service improvement (National Patient Safety Agency, 2003).

What marks out the emerging 'patient safety' agenda from previous models of clinical risk management and quality improvement is a fundamental re-conceptualization of what constitutes a threat to safety. Drawing from the theories of ergonomics and social psychology, the Human Factors approach suggests that whilst human error is inevitable it is also conditioned, enabled and exacerbated by the wider environmental, socio-organizational and technical systems within which behaviour is located (Reason, 1997; Vincent et al, 1998). A distinction is made between 'active errors' at the sharp end of clinical work, and the 'latent factors' that can negatively influence performance, such as broken communications, poor team working, mismanagement of resources, technological complexity or a lack of warning systems (Department of Health, 2000; Vincent and Reason, 1999). Through gathering information about the threats to safety and identifying the relevant 'upstream' latent factors, the NRLS offers to deliver enhanced patient safety (National Patient Safety Agency, 2003).

Despite policies emphasising the role of latent or systemic factors, it has been suggested that the professionals, staff and culture of the NHS are characterized by a 'person-centred' approach to safety, that is, a way of understanding safety that too readily focuses on individual responsibility and wrongdoing (Reason, 2000). This restricts organizational learning, not only because it neglects the latent factors that produce error, but more insidiously because it fosters a culture of blame where individuals are held responsible and often reprimanded for active errors and instances of patient harm that are actually conditioned by the wider system. The blame culture has major implications for organizational learning as it discourages staff from being open about their mistakes and reporting information to organizational leaders, because of the belief that they will be punished by colleagues or other disciplinary procedures. Although there are many known barriers to incident reporting, such as the lack of resources, time constraints, cultural taboos and collegiality, these cultural issues remain some of the most illusive and difficult to change, especially for medical professionals (Lawton and Parker, 2002; Vincent et al., 1999; Waring, 2005).

It has been argued therefore that a 'systems approach' to safety or 'systems thinking', based on the principles and theories of Human Factors,

should be fostered within the NHS to counter the culture of blame and to encourage incident reporting (Reason, 2000). This can be seen as a way of thinking about safety that seeks to recognize the aetiology of error through identifying the causal relationship between systemic or latent factors, individual error and patient harm; focusing in particular on the systemic role played by factors such as communication flows, safety checks, task design, equipment management and the effectiveness of backup systems (Reason, 1997; Vincent et al., 1998). In policy, this way of conceptualizing or thinking about safety is illustrated by the 'Swiss Cheese' model (Department of Health, 2000), which highlights how the triggers and opportunities for error located within the organization (the holes in the cheese) can align and combine to enable human error and patient harm; whilst the idea of 'root cause analysis' is promoted as a practical way of identifying the latent factors through continually asking 'why' safety is threatened (National Patient Safety Agency, 2003).

The promotion of this type of 'systems thinking' is couched within the wider objective of cultural change, where the creation of a 'safety culture' has been designated the first of 'seven steps to patient safety' (National Patient Safety Agency, 2003). Within the prevailing thinking of 'safety science' it has been shown how High Reliability Organizations (those organizations with good records for safety) are characterized by a strong 'safety culture' that underpins organizational learning and error management through shaping how employees make sense of safety, encouraging 'mindfulness' to dangerous situations, determining the relative importance of safety amongst other priorities and translating sense-making into communication and learning (Helmreich and Merritt, 1998; Reason, 1997; Weick, 1987, 2002). Accordingly the promotion of a 'safety culture' within health care, specifically 'systems thinking', is fundamental to the implementation of the 'patient safety' agenda, in that it shapes how staff give meaning to safety in such a way as to overcome the blame culture, and in doing so, supports organizational learning through encouraging staff participation in the NRLS (National Patient Safety Agency, 2003; Reason, 2000; Weick, 2002).

It is far from clear, however, how far the ideas and practices of the patient safety reforms, especially 'systems thinking', have penetrated the work and culture of frontline clinical staff. There is little contemporary evidence about how health care professionals, specifically medical doctors, think about the threats to patient safety, what informs their thinking, and whether indeed doctors favour a 'person-centred' and blame endorsing approach as opposed to a 'systems approach'. A number of sociological studies have revealed much about 'what' doctors see as the errors in their work, 'how' they come to hold these views, and what 'consequences' they have for professional regulation (Rosenthal, 1999). Significantly, these show that perception, interpretation and understanding is formed within the lived experience and social fabric of clinical practice and shaped by the shared cultural norms, attitudes and beliefs into which members are socialized (Paget, 2004). The way in which doctors give meaning to error has been linked to the

inherent uncertainty of medical knowledge (Fox, 1975; Rosenthal, 1995), the rituals of professional training and socialization (Bosk, 1979), the collective strategies for normalizing and rationalizing wrongdoing (Mizrahi, 1984) and for reinforcing the exclusivity and credibility of medical knowledge and professionalisms (Freidson, 1975; Rosenthal, 1995).

The constructionist approach typically adopted by these studies highlights how shared culture and knowledge inform thinking about safety, but also how these shared and patterned ways of thinking and communicating represent distinct, and sometimes competing discourses, which have significant implications for social order and control. For example, how one social group gives meaning to issues of safety has obvious ramifications for how safety is managed and this may be different from another social group. This constructionist perspective fundamentally questions the salience of proffered objective or universal taxonomies and definitions that are themselves the product of particular bodies of knowledge and cultural assumptions, including those ideas advanced by the Human Factors approach.

Importantly, much of the existing socio-cultural research pre-dates the current patient safety agenda by many years and potentially lacks contemporary relevance, given the broader changes witnessed in health care management, quality improvement and now patient safety. Following the major scandals and inquiries into health care safety, for example the Bristol Inquiry (Kennedy, 2001) and the Shipman Inquiry (Smith, 2005), and the subsequent emergence of the 'patient safety' agenda, there is now much greater exposure to the type of 'systems thinking' advocated in policy. An additional issue with the existing studies is that they typically focus on how the socialization processes and collegial norms of medicine serve to deal with the uncertainties of medical knowledge and to protect professional status. There is therefore little contemporary evidence of whether medical thinking about the threats to patient safety actually portrays a 'person-centred' approach (Reason, 2000) or whether it resembles the type of 'systems thinking' promoted by the patient safety movement. As suggested by Rosenthal (1999) in her review of the existing sociological literature shortly before the emergence of the UK 'patient safety' agenda, if the medical profession is to find new ways of improving its safety then it may 'have to reach outside its own ranks, to other experts, who have studied human error in other fields' (p. 152).

It is exactly this process of reaching out, or the extent to which other ideas have reached into medicine, that is considered in this article. Specifically, the aim is to understand whether the idea of 'systems thinking', as promoted by the patient safety movement, is penetrating the culture and epistemology of frontline medical doctors. I elaborate this aim along three lines of enquiry: first, to what extent do doctors think about 'the system' as a threat to patient safety; second, where does this type of 'systems thinking' originate; and third, what are the implications of doctors' 'systems thinking' for the

profession and the implementation of policy? Through following these lines of inquiry the article seeks to understand whether doctors' thinking about 'the system' as a threat to patient safety is commensurate with and informed by policy. These questions have significant implications for the success of the NRLS, culture change and securing medical participation in incident reporting.

Methods

The findings were gathered from an ethnographic study of one hospital's experiences of implementing the 'patient safety' reforms, undertaken between 2000 and 2003. The setting of the research was a single medium-sized NHS District General Hospital in the English Midlands, which was selected on the basis of its generality, in comparison with other acute NHS hospitals. This article is primarily based on the findings of in-depth, face-to-face interviews carried out with 30 specialist (consultant grade) physicians. The participants were selected from two samples. Initially, five doctors were selected from the management level of the hospital, based on their leadership roles and responsibilities within the areas of clinical risk, regulation and safety. This included the Medical Director, the Director of Clinical Audit, the Clinical Manager of Infection Control, the Clinical Manager for Medical Devices and a clinical representative for Education and Research. A further 25 specialist doctors were sampled from five medical departments – acute medicine, anaesthesia, obstetrics, rehabilitation and surgery – including the Clinical Director for each department. The interviews lasted between 40 minutes and two hours, with an average length of one hour and ten minutes.

Given the sensitive nature of the subject, that is, medical error, and also the prevailing policy significance for the subject, ethical approval was sought from the organization's Research Governance Committee and Management Committee. Ethical issues were also addressed in writing with the hospital and the Medical Director to protect the anonymity and confidentiality of participants. Individual participants were informed of these ethical considerations and the confidential handling of data before acquiring their consent and participation.

The conversational-style, semi-structured interviews (Burgess, 1991) followed a thematic guide that addressed a number of topics in accordance with the wider objectives of the ethnographic study, including questions related to how doctors made sense of and responded to the threats to patient safety experienced in their work, and questions to investigate whether this thinking was informed by and commensurate with the kind of 'systems thinking' promoted by the patient safety movement. The interview guide and approach was sufficiently flexible and open to enable participants to talk freely in their own language and terms, giving the doctors the opportunity to put forward and develop narrative accounts of their work, descriptions of

what they saw as unsafe patient care and to elaborate explanatory models of how these events were brought about. All interviews were electronically recorded and transcribed verbatim before being imported into the computer package *Atlas ti* for the purposes of analysis. Analysis took place concurrently with data collection broadly following the principles of grounded theory (Charmaz, 2000), whereby emergent themes and concepts were elaborated and clarified through subsequent research activities, and through the processes of coding and thematic categorization the findings were comparatively analysed for their internal consistency and conceptual relationships to address the research objectives and aims of the article.

It is important to consider the limitations of the study's ambitions and design. Firstly, this research is not intented to substantially develop or refute existing research in this area. The likes of Bosk (1979) and Rosenthal (1995) have thoroughly explored the professional socialization processes that surround medical performance and error, although long before the current policy context. It is my intention therefore to empirically develop these findings within the current period of NHS reform. Secondly, I recognize that the sample size and also the selection of only one hospital may risk showing only the views of those working within one organizational setting, and as such may not reflect the medical profession more generally. Whilst it is important to acknowledge this fact, it is also worthwhile recognizing that the pre-existing works in this area provide a reference point which can be used to support analysis, whilst the case study methodology succeeds in providing depth and validity to the data. Moreover, additional work reported by the author has substantiated the wider themes identified within this paper.

The findings

Initially, it is worth briefly considering the general manner in which doctors talked about the threats to patient safety. A common finding related to the apparent difficulty and complexity with which doctors articulated those aspects of their work associated with notions of error, risk and patient harm. This may be indicative of the sensitivity of the subject matter, especially the associations with error and wrongdoing, and also the difficulty for frontline staff in explaining factors beyond their immediate work setting. Moreover, the data often revealed multiple, divergent and sometimes contradictory lines of reasoning for why patient safety could be compromised, whilst relatively small sections of dialogue would raise a number of significant themes associated with how doctors make sense of the threats to patient safety in their work, including assumptions about causality, attitudes towards responsibility and blame, the meaning of professionalism, the role of management, the bureaucratized nature of the health service, and the preferred models of quality improvement. For example, the assertion by one participant that, 'Well, that's not my fault; it's a system error' (Participant 23)

reveals important findings about causality, in particular the distinction between individual and 'system' responsibility, which can be seen as a causal attribution to 'the system' that is perhaps indicative of the type of 'systems thinking' promoted by policy, whilst also indicating a particular perspective about the wider culture of blame and fault-finding within the NHS. These narratives and themes revealed much about how doctors gave meaning to the threats to patient safety, but in line with the aims of this article I asked three interrelated questions of the data. First, to what extent do doctors think about 'the system' as a threat to patient safety? Second, where does this type of 'systems thinking' originate, that is, is it informed by the type of 'systems thinking' promoted by the patient safety movement? Finally, what are the implications of systems thinking for the profession and the implementation of policy?

Do doctors think about the 'system' as a threat to patient safety?

A major finding from the interviews related to the way in which doctors would attempt to explain and account for the threats to patient safety experienced in their work. In the early exchanges of each interview the participants would typically talk about the threats located within the distinct stages of medical care, often using terms related to diagnosis or decision-making before moving on to consider treatment or intervention, such as prescribing or surgical technique. This would often involve a description of the uncertainty and difficulties of making a diagnosis or providing a treatment, highlighting the inherent uncertainty of medical practice (Paget, 2004; Rosenthal, 1995). Here the detailed language, jargon and explanations offered by doctors appeared highly individualistic and 'technical', resembling classifications and taxonomies proposed by other researchers (Tamuz et al., 2004). My first impression of the data was that doctors did indeed follow, to some extent, a narrow, individualized or 'person-centred' approach. However, participants would typically follow up this initial line of thinking to further explore the reasons why patient safety could be threatened by looking both inwards, towards the limits of medical knowledge and ability, and also outwards, to the wider context within which care is delivered. In general, it appeared that medical thinking about safety was characterized by a 'search for causality', which eventually led participants to move beyond narrow technical descriptions to seek out wider systemic factors. This illustrated a significant shift in medical thinking about the threats to patient safety, and it was at this stage that the 'system' began to feature as a prominent cause of individual error and, more generally, as a threat to patient safety.

> I think that you can work it from the bottom upward and almost all adverse incidents are related to failures at multiple levels. (Participant 19)

> [There] are people not thinking what they do and making a mistake. There are machine and equipment failures and things do go wrong. And then I suppose there are ones where it's a sort of system failure and maybe several things have happened all at the same time. (Participant 5)

When talking about 'system' errors or failures, doctors typically described this in two distinct ways. The first was as an impersonal, structural and organizational force that framed care provision, such as staff shortages, resource limitations or winter pressures. The second related to the activities of individuals or groups, often faceless and nameless, working elsewhere within the hospital who somehow undermined the desired or expected level of clinical care; for example, patient notes had been lost by another clinical team, specimen tests had not been completed in histopathology, or equipment was not delivered on time by porters. A special subgroup of the second related to intermediary activities of managers who were often seen as responsible for the 'mismanagement' of resources or for not effectively controlling organizational structures and procedures. These different ways of thinking about 'the system' were typically expressed with reference to the specialist areas of medical practice; where, for example, surgeons and anaesthetists highlighted the organizational problems of the operating department, and physicians working in acute medicine talked about the pressures of ward staff or bed availability. It was found that in some cases participants would combine or interchange their references to 'the system', moving from an appreciation of the wider structural pressures to considering the activities of different groups or managers within the organization. As the quotations below show, the idea of 'the system' as a threat to safety can refer to wider environmental and structural factors such as a 'flu epidemic' or 'beds not available', the work of other groups within the organization who have not 'fully prepared' patients, not 'communicated' information or the ineffective 'management of the system'.

> Of course quite often these aren't technical type errors; they are system, organizational errors … patient brought in too late, not properly assessed, brought down to theatre without being fully prepared. (Participant 19)

> You must know the NHS [laughter] … there are so many things that go wrong, patient notes going missing, test results delayed, beds not available. My God, it rarely works like I think maybe it should. (Participant 16)

> There are many things that make it difficult for us to provide the service that we want to and a lot of the time it comes down to the management of the system. (Participant 24)

> In the middle of winter and a flu epidemic, we are still going to get patients admitted with respiratory disorders sent to wards that are completely unsuitable … every time there is a ward move there is a communication problem or could be, everybody does their best but it can lead to all sorts of delays and it can lead to mistakes eventually. (Participant 20: Gerontologist)

Furthermore, the impact of 'the system' on patient care was also articulated in two ways. The first was as a contextual and indirect influence that made the delivery and management of care suboptimal in general, for example a lack of available beds or equipment, which did not directly impinge upon medical performance and technical competence, but framed the wider

environment for care provision experienced by many groups of staff. The second, and perhaps a more profound influence, was what doctors saw as the direct impact upon medical practice, where 'the system' compromised the quality and efficacy of medical decision making or treatment, typically by requiring doctors to deviate from their normal routines, work in suboptimal conditions or through providing distractions or pressure. In this case 'the system' primarily threatened the safety of medical work but in doing so threatened the patients' well-being.

> There are many pressures on what we do because of the way the service is organized and financed … these make it difficult for us to work to our best and sometimes it leads to patient harm. (Participant 8)

> Human error is always going to occur and it depends on how much pressure people are under, whether they have got time to make considered judgements or whether they are having to work so fast that they are having to make snap decisions which inevitably some of them go wrong. So again I would look at the system. (Participant 15)

Thinking about 'the system' as a threat to patient safety was clearly something that doctors did readily, stemming from a shared desire to identify 'why' safety could be compromised through explaining, in a backwards 'step-wise' fashion, the underlying causal relationship. For the doctors the idea of 'the system' as a threat to the patient appeared to have a dual meaning. The first centres on the ubiquitous, endemic and structural 'pressures' of the NHS, whilst the second acts as a proxy for roles, functions or duties often removed from the immediate clinical setting that have not been appropriately fulfilled or completed. What brings together, and perhaps explains, the interchangeable use of these two different interpretations is that 'the system' is also in common, everyday usage for generalizing about the how the health service is 'organized and run'; how people describe the 'place' they work in. It is when searching for the causality of danger or patient harm, for example in the context of the interviews or when confronted with uncertainty or harm within the clinical setting, that the concept of 'the system' is invoked as something more tangible and specific, representing an 'attributional process' that seeks to locate or relocate the sources of danger away from individual practice. I develop this interpretation below to suggest that this process helps to mitigate individual responsibility, providing a discursive resource to legitimize professional competence. Significantly, this process of seeking to identify 'cause and effect' is not dissimilar to the practice of 'root cause analysis' promoted in policy (National Patient Safety Agency, 2003) and at 'face value' resembles the type of 'systems thinking' promoted by the patient safety movement (Department of Health, 2000; Reason, 2000). Questions still remain, however, whether the doctors' type of 'systems thinking' is really commensurate with the version promoted by the patient safety movement, or whether it is shaped by current policies and prevailing theories.

Where does this 'systems thinking' come from?

Four common and shared discursive influences appeared to shape medical thinking about 'the system' as a threat to patient safety. First, the prevailing principles of 'patient safety', as articulated in national policy; second, other media sources, such as professional journals, research reports and television programmes; third, formal audits and reviews carried out within the hospital; and finally, knowledge and insight acquired through working in the NHS over a number of years. It could be argued that the last of these has a more general influence in shaping the more generic and everyday use of 'the system', whilst the others are more focused on the issue of 'the system' as a threat to patient safety.

Only a small group of participants appeared to have a detailed understanding of the national 'patient safety' agenda and, significantly, these all held medical-managerial responsibilities within the organization, as either Clinical Directors in the medical departments or as medical representatives within hospital management, such as the Medical Director. In occupying these leadership and representational positions, these individuals appeared to have greater exposure to policy, as policy guidelines and edicts were disseminated across the health service. Exposure to this information certainly seemed to be informing and shaping how these medical-managers talked about 'the system', with many making direct reference to *An organisation with a memory* (Department of Health, 2000), referring to it by the acronym 'OWAM', and using the language of policy, such as the 'Swiss Cheese model' and 'root cause analysis'. In general, these participants regarded the patient safety agenda positively and were encouraged by new attempts at organizational learning.

> Root cause analysis is standard stuff in industry and other places; you know, we shouldn't be reinventing the wheel just for the NHS. (Participant 11: Medical Director)

> Maybe several things have happened, each one pretty small but they just happen to happen all at the same time and contributed to something more important, which is the 'Swiss Cheese' theory and that sort of thing. (Participant 5: Director of Clinical Audit)

This is not to say that those participants without medical-managerial responsibilities were oblivious to the 'patient safety' agenda, but for these other doctors their understanding of policy and 'systems thinking' was typically informed by other sources, such as professional publications, television documentaries or high-profile media 'scandals'. In many cases these other influences corresponded with, endorsed or provided commentaries on the new policy agenda, for example the Channel Four documentary *Why doctors make mistakes* (Moore, 2000) and the special themed edition of the *British Medical Journal* entitled 'Reducing error: Improving safety' (*British Medical Journal*, 2000). These did much to reinforce and legitimize the type of reasoning followed by doctors, especially the 'search for causality':

> Yes, individual errors do occur there is no doubt about that and research has shown and popular television programmes about medical errors have shown that it is usually a systems error. (Participant 7)

> I have that issue of the *BMJ* with the aeroplane on the front, and I have been telling my colleagues about it and lending it out. (Participant 14)

Another influence on medical thinking about the threats to patient safety was information produced by internal reviews and investigations, such as Confidential Enquiries, Clinical Audit and the Morbidity and Mortality Committees. It was suggested by most participants that through participating in these collegial activities they had come to appreciate how the wider context of care can have a negative influence on patient safety and medical practice. As such, participation in these processes seemed to crystallize and substantiate a shared understanding of those factors that threaten both the quality of medical practice and patient safety. There was, however, little indication that these procedures were informed by or promoted current policies, but, rather, the implication was that they reflected the collegial and regulatory customs of medicine (Freidson, 1975; Rosenthal, 1995).

> We audit our service and this has picked up some consistent problems that, when we have analysed them, we have found to be problems with how the service is managed not really clinical practice. (Participant 5)

> When we note that something is not right, somebody is asked to audit that straight away … [it] is a very well-oiled system and a very tight system; when things go wrong, we just go and do things very quickly. (Participant 24)

Perhaps the most powerful, embedded and deeply felt influence on medical thinking, however, came from years of working within the NHS. This represented a tacit or 'taken for granted' (Polanyi, 1966) understanding of how the organization of services can undermine the quality of medical care. It was often difficult for participants to explicitly articulate how they knew about 'the system' and to explain what evidence they had of its causal powers, yet it was apparent in the way doctors talked about their work, their hospital and the NHS in general, that they shared an understanding of how services could be disorganized. As suggested above, this everyday knowledge of 'the system' was in a sense a generalized shorthand for describing 'the workplace' and can be seen in many of the quotations presented above where participants talked, almost as a matter of fact and with some humour, about the organizational pressures on their work.

> I don't know … I guess you just know … after spending 15 years working here I've got to know how the place works and sometimes doesn't. (Participant 16)

It can be speculated that this way of thinking is acquired and tacitly held through first-hand clinical experience. Through the processes of medical training, specialization and daily practice, doctors not only learn and develop invaluable technical knowledge and expertise, but also implicit and 'taken for granted' knowledge of the many influences and pressures found

in clinical practice, from the demands of teamwork to resource limitations. Furthermore, it can be argued that the more experienced and socialized a doctor becomes within the organization of health care, the more these pressures are perhaps accepted, taken for granted and implicitly understood as 'par for the course' as they learn to work within 'the system'. However, when seeking to understand why patient safety can be put at risk, through the attributional process described above, this experiential tacit knowledge of 'the system' can be seen as providing the basis for better understanding and articulating the causal factors that threaten patient safety, either as organizational pressures or poor management. I develop this interpretation below to suggest that this tacit understanding and learning to work with the system has important implications for medical professionalism.

Although a number of participants were clearly aware of the national policy agenda and were appreciative of the Human Factors approach, 'root cause analysis' and 'systems thinking' as promoted by the patient safety movement, for the majority of doctors it was the tacit or taken for granted understanding of service organization, resource limitations, (mis-) management or the competing priorities of national policy that seemed to have the most pervasive influence on medical thinking about 'the system' as a threat to patient safety. Although difficult to articulate and express, this further illustrates its deep cultural and discursive significance to medical practice and thinking. Importantly, this knowledge is acquired through years of first-hand experience (Paget, 2004) and was embedded within medical thinking long before the current policy context. Although there are similarities between the type of experiential and everyday 'systems thinking' followed by doctors and the structured line of thinking and 'root cause analysis' promoted by policy, the types of thinking remain distinct, with medical thinking being based upon a divergent set of discursive and cultural resources that will have further implications for medical professionalism and the implementation of policy.

The implications of 'systems thinking'

My next concern was to understand the implications of the doctors' type of 'systems thinking', as opposed to the policy approach, for both medical professionalism and the ongoing implementation of the patient safety reforms. As in the sociological works discussed above, I conceive medical thinking as a shared and communicated way of perceiving, interpreting and responding to safety concerns that is forged from within medical culture and knowledge, having important consequences for maintaining professional status whilst also impinging upon the success of reform.

The professional implications build on Mizrahi's (1984) concept of 'discounting' where he shows how trainee doctors blame other factors for error, including 'the system', in an effort to mitigate or 'discount' responsibility. Elaborating this idea, I found that doctors identify 'the system' as a threat to safety through making an interpretative causal

link between 'the system', 'individual practice' and 'patient safety'. This can be seen in my earlier discussion where, for example, one participant suggested that 'you can work it from the bottom upward and almost all adverse incidents are related to failures at multiple levels' (Participant 19), or similarly where another talked about the impact of 'winter pressures'. It can be argued that this way of thinking serves to relocate the source of danger or 'failure' to other 'pressures' thereby deflecting questions of professional competence and protecting against criticism, self-doubt and a loss of credibility. As one surgeon stated when describing an example of unsafe care, 'Well, that's not my fault; it's a system error' (Participant 23). Systems thinking can therefore be invoked to protect against professional blame and responsibility when patient care is threatened or substandard.

> We all make mistakes, there but for the Grace of God … but a lot of the problems are not down to what we do: they are the result of other things going on within the organization. (Participant 27)

However, this type of 'systems thinking' could be seen as too easily removing professional accountability. The safety management literature highlights the problem of 'learned helplessness', whereby an excessive focus on latent factors leads to the individual being seen as a passive victim with little responsibility, even when there may be an issue of individual responsibility or complicity. As such, the prevailing logic of policy demands analysis of the interaction between the active and latent factors, and could inadvertently question the ethos of a 'no blame culture', endorsing instead a 'low blame' or a 'just blame' culture (National Patient Safety Agency, 2003). However, the doctors' thinking about the threats to patient safety seemed to reflect more than just a desire to shift blame, revealing something more significant about the nature of medical socialization and the need to deal with uncertainty or deliver certainty (see Atkinson, 1984; Fox, 1975). As indicated above, through the experiences of care provision, doctors seem to acquire a tacit understanding of, what were often termed, the 'pressures' of 'the system'. An anticipated implication for medical professionalism is that it is expected that newcomers to the service must rapidly learn to appreciate and work with these factors in order to provide patient care, in other words learning to cope with the systems and still provide clinical care (see Atkinson, 1984; Fox 1975).

> These problems arise day-in, day-out. I suppose what is important is learning how to cope with them. (Participant 8)

> … members of the firm need to realize how we work and how the service is organized … the house officers are on a steep learning curve and a part [of that] being gaining through clinical experience but also getting to grips with the service. (Participant 16)

Rather than 'learned helplessness' it could be argued, therefore, that a feature of medical socialization and culture could be termed 'learned tolerance'. This sense of coping and tolerance was further illustrated by the way in

which doctors would respond to the threats to patient safety. The interviews revealed that the doctors placed primary importance on dealing with the immediate clinical danger, for example blood loss or a miscalculation of dose, which would normally involve some instant technical intervention. Despite recognizing that in many cases such dangers were brought about by other factors, such as poor communication or time pressures, there was little indication that the participants would at some later time seek to make broader or more systemic changes.

> We never seem to have enough laryngeal masks of the right size … obviously you do the best you can … get one from another theatre, try and make do with some thing that is slightly out, otherwise the patient can't be intubated and anaesthetized. (Participant 20)

> Obviously the important issue is to treat the patient as best you can; I can't make changes to the way the hospital runs … I might have a word with our Clinical Director and raise it in a meeting. I once wrote a letter to the Medical Director, but that did nothing. (Participant 15)

The emphasis therefore appeared to be on accommodating, coping with and tolerating the threats presented by 'the system' in order to deliver effective and safe patient care. This has further implications for the implementation and success of the patient safety reforms, especially incident reporting. Given that doctors appeared to tolerate the systemic threats, whilst focusing their efforts on the immediate remedial intervention, there appeared to be little recognition of the role played by incident reporting. Specifically, it was argued that there was little relevance in incident reporting because the threats presented by the system were almost inevitable, and emphasis was placed on learning to cope, rather than changing the system.

> What good does [reporting] do? It's not like it could ever make us error-free. (Participant 5)

> These problems are so ingrained in how the service is organized … there have been a number of attempts to sort them out, and incident reporting is the new one, but it will never really be able to deal with the underlying problems. (Participant 25)

What these quotations also show is that some threats to safety are regarded as amenable to change whereas others are beyond change and therefore the only option available to the doctor is to learn to cope.

It could be argued, therefore, that whilst doctors' thinking about the threats to patient safety certainly illustrates a form of 'systems thinking', when responding to these threats the doctors maintained a narrow, technical or what has been termed a 'person-centred' perspective (Reason, 2000). This may be a consequence of medical training whereby learning to work with or cope with the system is a feature of medical socialization. It may also indicate the overriding importance of treating the presenting (current) patient effectively and safely rather than seeking to modify the wider management of services, which perhaps reveals a division of responsibility

between service managers and service providers. Alternatively, it may suggest that past efforts to improve the organization of the service have been unsuccessful thereby discouraging participation in the NRLS.

When considered alongside accounts of the closed, collegial and exclusive domains of professional regulation (Kennedy, 2001; Rosenthal, 1995), the capacity to 'discount' individual error by invoking 'the system', together with the doctors' tendency to work with and tolerate 'the system' and the apparent lack of support for incident reporting (see also Vincent et al., 1999; Waring, 2005) leads to the possibility that some threats to safety, whether individual or systemic in nature, may consistently escape scrutiny. This also raises serious questions about the extent to which cultural change and the creation of a 'safety culture' is being made (National Patient Safety Association, 2003), given that, despite openly acknowledging the causal role played by 'the system', doctors maintain an individualized and 'person-centred' approach for responding to these threats.

Although medical thinking about 'the system' clearly resembles the ideas promoted by the patient safety movement, it is important to consider that they represent divergent discourses which have different preferences for the control or management of safety (a point that is seemingly overlooked by the prevailing patient safety movement, which promotes the Human Factors approach and 'systems thinking' as apparently objective and 'true' ways of understanding and controlling the threats to safety). Rather than seeing doctors as in some way lacking or deficient in this prevailing model of 'systems thinking', it is better to see that doctors have acquired over years a divergent understanding of 'the system' with divergent assumptions about the control of safety.

Nevertheless, the clear willingness of doctors to think in terms of 'the system' is promising for policy and suggests that the need to instil a completely new way of thinking may be unnecessary. The future of 'patient safety' may be enhanced through better articulating the similarities between medical thinking and the principles of policy, showing that it is not necessarily something radical, managerial or non-medical; bringing to the two discourses of safety together around common themes and objectives. This may involve persuading doctors to be 'mindful' (Reason, 1997) of the threats to patient safety. This may require a language that is less managerial in style and more grounded in the real experiences of patient care. This is not to say, however, that advances made in this area will necessarily overcome the barriers to incident reporting that exist in other areas of medical practice and culture.

Conclusions

It has been said that the health service is too often characterized by a 'person-centred' approach to safety that fosters a 'blame culture' amongst professionals and inhibits organizational learning (Department of Health, 2000; Reason, 2000). The creation of a 'safety culture' is therefore

central to the success of the patient safety movement, with a type of 'systems thinking' being promoted to encourage 'mindfulness', to counter the fear of blame, further the virtues of openness and learning, and encourage staff participation in the NRLS. In this article I have been concerned to appreciate whether the type of 'systems thinking' promoted by the patient safety movement is informing how doctors think about the threats to patient safety; referring back to Rosenthal's (1999) suggestion, to appreciate if medicine is reaching out or being reached by experts in other fields to change its way of thinking.

Although much has been written about how doctors make sense of mistakes, this work pre-dates the current patient safety agenda. Building on these studies, my findings indicate that contemporary medical thinking is characterized by a 'search for causality' that commonly identifies 'the system' as an underlying threat to patient safety. It is important to note that doctors' thinking about 'the system' is articulated in a generic everyday sense and more specifically as a threat to patient safety. It is in the latter of these two uses that, through an attributional process, 'the systems' functions to describe wider structural and organizational pressures that contribute to unsafe patient care, as well as acting as a proxy for questionable individual or group performance elsewhere within the organization. This therefore questions the alleged prevalence of a 'person-centred' approach, and suggests that medical thinking outwardly resembles the type of 'systems thinking' and 'root cause analysis' advocated in policy.

Doctors' thinking about 'the system' as a threat to patient safety is not, however, strongly informed by policy, being instead acquired through the first-hand experience of working within the health service, whereby doctors come to implicitly appreciate the pressures and limitations inherent within the organization of the NHS. Ultimately, medical thinking is not commensurate with the discourse of safety advocated in health policy, representing instead a distinct social discourse that competes to define and control the threats to patient safety. Significantly, it can be seen as constituting a resource for rationalizing or mitigating issues of individual wrongdoing (Mizrahi, 1984), whilst the main implication for policy relates to the doctors' engagement with the NRLS, with doctors appearing to accommodate and work with the threats presented by the system, rather than participating in incident reporting. This questions the extent to which cultural change within the NHS is being made as medical thinking and behaviour remains distinct from the assumptions and ambitions of policy, with doctors' thinking remaining strongly influenced by the socialization processes and longstanding culture of medicine (Bosk, 1979; Rosenthal, 1995).

Contrary to what has been suggested, doctors' thinking about the threats to patient safety is characterized by a version of 'systems thinking', but, importantly, this way of thinking is different in character and implication from the type of 'systems thinking' promoted in policy. This is because the way doctors understand and make sense of the threats to safety is grounded in the

first-hand experience of clinical work and the wider culture and discourse of medicine, which is significantly different from the prevailing safety discourse of the patient safety movement which is based on the abstract principles of 'safety science' and the Human Factors approach. As in previous studies in this field, this constructionist research suggests that this safety orthodoxy represents merely one of many discourses that can inform social knowledge about safety and should not be seen as an objective or universal model. In conclusion, it appears, therefore, that doctors are neither reaching out to nor being reached by the experts from other fields, and that the concept of 'systems thinking' as promoted by the patient safety movement is not significantly penetrating the culture of frontline medical staff.

References

Atkinson, P. (1984). Training for certainty. *Social Science and Medicine*, *19(9)*, 949–56.

Bosk, C. (1979). *Forgive and remember*. London: University of Chicago Press.

Brennan, T. and Leape, L. (1991). Incidence of adverse events and negligence in hospitalized patients. *New England Journal of Medicine*, *324(6)*, 370–6.

British Medical Journal (2000). Reducing error: Improving safety, Special Themed Edition, *320*, *March*.

Burgess, R.G. (1991). *In the field: An introduction to field research*. London: Routledge.

Charmaz, C. (2000). Grounded theory: Objectivist and subjectivist methods. In N. Denzin and Y. Lincoln (Eds.), *Handbook of qualitative research*. London: Sage.

Department of Health (2000). *An organisation with a memory*. London: The Stationery Office.

Fox, R. (1975). Training for uncertainty. In C. Cox and A. Mead (Eds.), *A sociology of medical practice*. London: Collier-Macmillan.

Freidson, E. (1975). *Doctoring together*. New York: Elsevier.

Helmreich, R. and Merritt, A. (1998). *Culture at work in aviation and medicine*. Aldershot: Ashgate.

Kennedy, I., Chair (2001). *Bristol Royal Infirmary final report*. London: The Stationery Office.

Lawton, R. and Parker, D. (2002). Barriers to incident reporting in a health care system. *Quality and Safety in Health Care*, *11*, 15–18.

Mizrahi, T. (1984). Managing medical mistakes: Ideology, insularity and accountability amongst internists-in-training. *Social Science and Medicine*, *19*, 135–46.

Moore, W. (2000). *Why doctors make mistakes*. London: Channel Four Publications.

National Patient Safety Agency (NPSA) (2003). *Seven steps to patient safety*. London: NPSA.

Paget, M. (2004). *The unity of mistakes*. Philadelphia: Temple University Press.

Polanyi, M. (1966). *The tacit dimension*. London: Routledge and Kegan Paul.

Reason, J. (2000). Human error – models and management. *British Medical Journal*, *320*, 768–70.

Reason, J. (1997). *Managing the risks of organizational accidents*. Aldershot: Ashgate.

Rosenthal, M. (1995). *The Incompetent doctor*. Buckingham: Open University Press.
Rosenthal, M. (1999). How doctors think about medical mishaps. In M. Rosenthal, L. Mulcahy and S. Lloyd-Bostock (Eds.), *Medical mishaps*. Buckingham: Open University Press.
Smith, J., Chair (2005). *Shipman – The final report*, London: The Stationary Office.
Tamuz, M., Thomas, E. and Franchois, K. (2004). Defining and classifying medical error: Lessons for patient safety reporting systems. *Quality and Safety in Health Care*, *13*, 13–30.
Vincent, C. and Reason, J. (1999). Human Factors approach in medicine. In M. Rosenthal, L. Mulcahy and S. Lloyd-Bostock (Eds.), *Medical mishaps.* Buckingham: Open University Press.
Vincent, C., Stanhope, N. and Crowley-Murphy, M. (1999). Reasons for not reporting adverse incidents: An empirical study. *Journal of Evaluation in Clinical Practice*, *5(1)*, 13–21.
Vincent, C., Taylor-Adams, S. and Stanhope, N. (1998). Framework for analysing risk and safety in cultural medicine. *British Medical Journal*, *316*, 1154–57.
Waring, J. (2005). Beyond blame: Cultural barriers to medical incident reporting. *Social Science and Medicine*, *60*, 1927–35.
Weick, J. (2002). The reduction of medical errors through mindful interactions. In M. Rosenthal K. and Sutcliffe (Eds.), *Medical error: What do we know, what do we do?* San Francisco: Jossey-Bass.
Weick, K. (1987). Organizational culture as a source of high reliability. *California Management Review*, *29(2)*, 112–27.
World Health Organization (WHO) (2004). *World alliance for patient safety*. Geneva: World Health Organization.

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