

On doing ‘risk work’ in the context of successful outcomes: exploring how medication safety is brought into action through health professionals’ everyday working practices

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Abstract

Interest in risk has grown exponentially in health care, resulting in a plethora of policies and guidelines to manage risk at all levels across the health care system. However, the impact of risk on the nature and experiences of health care work remains a relatively neglected area of research on risk in health care. Building on the concept of ‘risk work’, in this article we examine how medication safety is brought into action through health professionals’ everyday working practices at the point of medication administration. Drawing on two closely related datasets, both generated in a large paediatric hospital providing secondary and tertiary care in England, we argue that medication-related risks are constructed and negotiated through situated social interactions. Frontline practitioners actively reconcile the logics of risk work and good quality bedside patient care enabling them to get risk work done to successfully meet the formally established standards of quality and safety performance. ‘Risk work’ has the potential to make visible and explicit a range of risk-related practices that may not be acknowledged as such if they do not align with the established meanings of risk and the normative frameworks built around them. A focus on ‘risk work’ can bring in a new lens to the study of risk in health care with the potential to generate learning from *how risk work gets done in the context of routine clinical practice and successful outcomes*, rather than incidents and failures, in healthcare service provision.

Keywords: Risk, organisations, medication safety, everyday practice, informal logics

Introduction

Risk is arguably an integral part of healthcare delivery. Interest in risk has grown exponentially in healthcare, particularly in the NHS. This has resulted in a plethora of national policies to manage risk at all levels across the healthcare system, including ‘information governance, programme, project and clinical risks and those arising from the oversight of the NHS commissioning system as a whole’ (NHS England, 2015, p. 7). Such interest is also reflected in health services research, particularly in relation to patient safety, where medication error has been considered a main outcome likely to result in harm (Dückers et al., 2009).

However, according to Gale et al. (2016), the impact of risk on the nature and experiences of healthcare work remains a relatively neglected area of research on risk in healthcare. Building on the authors' proposal of 'risk work', understood in terms of 'working practices framed by concepts of risk' (Gale et al., 2016, p. 1046-1047), in this article we explore how medication safety is brought into action through health professionals' everyday working practices in the context of a paediatric hospital providing secondary and tertiary care. In particular, we focus on how risk-related practices are carried out by frontline practitioners at the point of medication administration (last stage of the medication process) and the point at which risks can become actual harm caused to patients.

Risk and the medication process in hospital settings

In hospital settings, the medication process is generally understood to comprise five broad stages (prescribing, transcribing/documenting, dispensing, administering and monitoring) and involve a range of professionals, documents, practices and situations that can give rise to several risks, with the potential to result in medication errors. These are the main factors contributing medical errors that can be associated with over a million injuries and thousands of deaths every year (Kohn, Corrigan, & Donaldson, 2000).

Within that, the administration of medication itself is a complex and multistage process, mostly managed by nurses (Pirinen et al., 2015). The last stage of the medication process in hospitals is the point at which medications are actually given to patients. An exploration into risk-related practices at this stage can be particularly relevant to ensure medication safety, not only because such practices can be directly tied to actually causing (or preventing to cause) harm to patients, but also because the medication administration process is known to be particularly prone to errors due to a range of individual and system factors encountered by frontline practitioners (Parry, Barriball, & While, 2015).

In the context of our study, the medication process was mediated through an organisational policy that:

'sets out to define how medicines are prescribed, supplied and administered to patients' (Documentary data, Hospital policy 1).

This policy, alongside other local policies and guidelines, come to define the standards of good practice within the organisation, including many directions for practice which:

‘have been developed nationally to minimise risk following actual incidents and are mandatory for all staff involved in the medication process’ (Documentary data, Hospital policy 1).

This is in keeping with the current approach to risk management in the NHS

Such approach to risk management is, in turn, informed by a realist approach to the conceptualisation of risk, which in the NHS is defined by the Department of Health as:

the likelihood, high or low, that somebody or something will be harmed by a hazard, multiplied by the severity of the potential harm. (Department of Health, 2000, p. xii)

As a result, local policies and guidelines bring about complex systems and procedures designed to avoid both any recurrent ‘human factors’ that are seen as barriers to acting rationally and any ‘operational hazards’ (working conditions and/or organisational processes) that are seen as barriers to preventing errors or mitigating their effect (Reason, 2000).

However, as we will show, actual clinical practice does not necessarily equate to total adherence to expertly-defined risk management systems and, therefore, a focused exploration into everyday risk-related working practices can offer a more nuanced understanding of how medication safety is actually achieved.

Risk, healthcare organisations and everyday working practices

In the context of healthcare organisations, the meaning of ‘risk’ tends to be uncontested and taken-for-granted, unproblematised in light of the official discourses on risk within the healthcare system and each particular organisation. In fact, ‘risk management’ constitutes one of the ‘seven pillars’ of clinical governance, the rationale being:

if a [healthcare organisation] does not systematically identify risks and if there is not a readiness to learn from mistakes, patients and staff may suffer unnecessary exposure to danger. (Day & Klein, 2004, p. 17)

Following Power’s (2004) exploration of the ‘risk management of everything’, risk management organises what cannot be organised, holding out the promise of control and manageability for organisations (such as healthcare) with little or no choice but to somehow grasp and handle the inherent complexity and uncertainty of their activities. Thus, the conceptualisation of risk in healthcare has been transformed from being a matter of:

accidental harms done to patients during the care delivery process; [to] subsequently become part of a regulatory regime concerned with the effectiveness of health care in general, a matter of health care organisation rather than specific clinicians. (Power, 2004, p. 24)

This involves particular ways of allocating responsibility (Labelle & Rouleau, 2016). Kemshall (2000, p. 146) has argued that ‘audit has replaced trust, and accountability has replaced unquestionable expertise’. With ‘risk’ being a central aspect of such audits and integral to the judgement of the ‘quality of the practices’ being judged (Beaussier, Demeritt, Griffiths, & Rothstein, 2016), institutional governance appears to have been ‘colonised’ by risk (Rothstein, 2006). Indeed, the Foucauldian tradition within the sociology of risk has consistently shown how risk is built into governmental practices (O’Malley, 2008) and, more specifically, explorations on clinical governance viewed through the lens of ‘governmentality’ demonstrate how such frameworks not only enable us to understand the institutionalisation of expertise as integral to the operation of systems of power, but also offer a distinctive way of rethinking how trust connects professional expertise and regulation (Flynn, 2002). As Flynn points out:

a crucially important feature of this ‘culture’ of audit is that individuals become co-opted into it: they are expected or required to subscribe to it as intrinsically worthwhile and to participate in its routine implementation, and in so doing they are taking on individual responsibility and embracing accountability. (2002, p. 164)

Clinicians are thus enrolled into a system of governance which aligns clinical and managerial rationales based on individual sign-up. In this way, audits and formalised risk assessment systems bring with them a severe challenge to the risk knowledges of practitioners in their daily practice (Hillman et al., 2013).

These concepts connect with another important sociological contribution to the understanding of risk: the ‘expert-lay controversy’. Following Lupton (1999, pp. 31-34) ‘expert’ and ‘lay’ knowledge about risk can be differentiated in the following ways. ‘Expert’ knowledge about risk relies on ‘technico-scientific’ approaches to, and understandings of risk, which are essentially ‘objectivist’ accounts of risk based on formal science-based knowledge, generally emerging from disciplines such as medicine, economics or ‘psy’ disciplines. It is often based on probabilistic reasoning, typically involving a technical calculation of risk and associated with notions such as ‘objectivity’, ‘accuracy’ or ‘truth’. In contrast, ‘lay’ knowledge about risk is grounded in ‘sociocultural’ accounts of risk based on perceived/experiential knowledge, or informal everyday knowledge, emerging from perceptions and/or experiences of those involved. Meanings of risk operate as part of people’s everyday lived subjectivity and are often associated with notions

such as ‘bias’ and ‘inaccuracy’, or rather, ‘irrationality’, in the sense of being sustained by beliefs and emotions.

Such a distinction, however, is in itself tied to a ‘realist’ approach to risk, which assumes the dichotomy between ‘objective’ and ‘subjective’ risks and whose analytical concerns tend to focus on how objective risks defined by normative frameworks are subjectively perceived, or misperceived, and how lay and expert views differ, particularly when it comes to determining where these risks are located and how they can be reduced. Thus, more critical perspectives, drawing on a broadly defined ‘sociocultural approach’ to risk, stemming from the anthropological work of Douglas (2003a), suggest that:

knowledges about risks - both ‘lay’ and ‘expert’ - are inevitably mediated through social and cultural frameworks of understanding and are therefore dynamic, contextual and historical. (Tulloch & Lupton, 2003, p. 12)

Thus the construction of risk can be understood as a social process (Horlick-Jones, 1998) whereby lay knowledge about risk, embedded within subcultures, social networks and relationships, articulate situated rationalities, challenging views and generic risk assessments put forward by experts, conveying what Wynne (1989, p. 39) described as ‘optimistic fantasies about behaviour in the real world’. In this context, lay actors are not just mere ‘recipients’ of expert risk knowledges that they use to inform their decisions and actions, but rather they are actively generating their own knowledges about risk and acting upon them (Horlick-Jones, 1998; Wynne, 1998). Following Lupton (1999, p. 34) both risks as measured and identified by ‘experts’, and risks as perceived by ‘lay’ actors, lead to certain actions. It is therefore relevant to look at the ways in which these understandings are constructed and acted upon in the context of risk-related everyday working practices (Horlick-Jones, 2005a; Horlick-Jones, 2005b; Zinn, 2008).

In this context, a focus on ‘risk work’ offers the opportunity to go beyond and help to improve existing established approaches to risk in healthcare by problematising the established taken-for-granted meanings of risk and examining risk-related everyday working practices from the perspective of ‘risk workers’ themselves as a way to conceptualise and deal with risk in healthcare organisations. In doing so, ‘risk work’ has the potential to make visible and explicit a range of risk-related practices that may not be acknowledged as such if they do not align with the established meanings of risk and the normative frameworks built around them.

In this article we are particularly interested in exploring to what extent ‘risk work’ can bring in a new lens to the study of risk in healthcare with the potential to generate learning from *how risk work gets done in the context of routine clinical*

practice and successful outcomes, rather than incidents and failures, in healthcare service provision.

Methods

To address these analytical concerns, we draw upon two closely related datasets, both generated in a large paediatric hospital providing secondary and tertiary in England.

The first dataset was derived from a qualitative case study exploring the role of nurses in the medication process prior to the implementation of electronic prescribing, the main findings of which we have already published (Farre, Heath, Shaw, Jordan, & Cummins, 2017). We used a case study design (Stake, 1995; Yin, 2014) combined with grounded theory methods (Charmaz, 2014), in which the nursing staff of a paediatric surgical ward were the unit of analysis. The sampling strategy focused on nursing staff qualified to administer medicines on the selected ward. Initial sampling relied on a purposeful maximum variation strategy (Patton, 2002) based on the ward's staffing rationale. We then used theoretical sampling (Charmaz, 2014) to narrow the focus onto emerging analytical categories and develop and refine them. We undertook three focus groups and six semi-structured individual interviews, involving a total of 24 nurses. We audio-recorded, transcribed and anonymised all the group and individuals interviews. We used empty drug charts and exemplar anonymised completed drug charts as discussion aids and incorporated into the dataset to assist insight into cultural features and technical operations during data analysis. We undertook concurrent data analysis and this informed further data collection and sampling decisions using the constant comparative method (Glaser, 1965) and memo-writing, until we achieved saturation. The study was conducted as part of a service evaluation and did not require NHS ethical approval. We obtained written consent from all participants.

The second dataset was derived from the 'before' stage of a longitudinal qualitatively-driven mixed-method study exploring the effects of implementing electronic prescribing on in-patient care provision in paediatrics (Farre & Cummins, 2016). The 'before' dataset upon which we drew for this article comprised approximately 60 hours of non-participant observation across three hospital wards, 12 formal face-to-face interviews (5 doctors, 3 nurses, 2 pharmacists, 1 pharmacy technician, 1 IT/clinical systems staff) and 1 focus group with nurses. We used a purposeful, maximum variation sampling strategy (Patton, 2002), focusing on a wide range of cases to get variation on dimensions of interest, which, in this case were 'types of wards' and 'roles' involved in the prescribing and administration of medicines in the hospital setting. We identified analytic

themes from the field notes and interview data. We also analysed available documents including relevant policies, guidelines, newsletters and relevant videos and discussion forums available on the staff intranet. The study obtained a favourable ethical opinion from an NHS Research Ethics Committee (15/SS/0157) and NHS research governance approval was obtained at the hospital site. We obtained informed consent from all participants and anonymised all data before analysis.

Findings

Medication safety and risk-related practices in clinical work: beyond the expert-lay knowledge divide

In line with other hospital settings, good normal risk-related practices in the settings we collected data from were informed by ‘expert’ knowledges about risk, and so provided the official discourse on medication safety. Through organisational policies and practice guidelines, alongside an array of metrics and key performance indicators, ‘expert’ knowledges about risk defined how medication safety was conceptualised in that particular context. As expected, frontline practitioners ensured that formally established risk management practices were followed in practice. As Christine, a senior nurse, told us:

As a senior nurse, my role is to ensure that the medicines policy is followed and that the right patient gets the right medicine.
(Interview 6)

However, it also became clear that actual clinical work did not consist of formally regulated risk-related practices only. For example Tracy, a nurse manager observed:

At the moment, when we have a check, we check the whole process. So you’d have two nurses - one has the sort of almost preparatory role and the administration and one serves as a checker to check that they’ve picked up the right drug, that they’ve checked the dose, they’re happy with the dose, they’re happy with what they’ve drawn up, and that they’re taking it to the right patient. Now, at that point, they’re signing to say that they’ve done that checking and whilst, in theory, they’re supposed to be saying actually, ‘I’ve seen it now administered’. In reality, actually, that’s not the case. They walk away and they leave it with the first nurse. (...) At that point and then the first nurse has taken responsibility for making sure it’s administered but the second person has already gone off and started doing

something else and whilst we might say, 'Is that right?' They've found a shortcut. (Interview 11)

Although non-prescribing nurses were expected to carry out risk-related practices in relation to the administration phase of the medication process, we found that in practice, nurses' risk-related work also contributed to other phases of the medication process such as the prescribing. Laura, a nurse who took part in the first focus group, commented that:

on the nights if you've got say a doctor that's covering multiple specialities (...) once they've prescribed, we will ask them to wait on the ward while we check it to make sure that it is safe and is the correct dose before they leave the ward. (Focus Group 1)

Yvonne, a nurse who took part in the second focus group, reflected in the impact of the ordering and supply of medicines on what:

We're aware of what patients are using more of, whether that's regular drugs or whether it's controlled drugs, because the controlled drugs are checked every day as well. So we know where the level is. So, again, it's about making sure that that is informed to those who actually can do something about it so we don't end up in a situation whereby you haven't got any. (Focus Group 2)

These practices remained part of what is known as the 'hidden' role of nurses, lost in a system that conceives medication safety in terms of metrics and is geared towards that which 'has not been done' (as opposed to that which has) to ensure medication safety. As a result, reporting systems that feed such metrics experience a similar gap when put in relation to actual practice, or when medication safety is understood in terms of 'what is being done' to ensure any emerging risks are mitigated and acted upon. This reasoning underpins the risk-related everyday working practices of nurses in relation to medication safety that are occurring, but not necessarily being seen. Yet it is clear that nurses devote an important amount of their time and effort preventing and acting upon potential errors and near-misses before they reach the point of requiring reporting through formal systems. For example, although nurses such as Sarah reported that 'at least on a daily basis there's something wrong with somebody's drug chart on the ward' (Focus Group 2); they also highlighted, like Amy, that 'most of the time it doesn't really affect giving [the medicines] on time' (Interview 2).

Hence, we now go on to explore our next analytical concern: how frontline practitioners construct the rationale underpinning the informal everyday working practices that help to enable medication safety in this context.

Social construction of medication-related risks by frontline practitioners

Following Tulloch and Lupton (2003), we argue, medication-related risks were constructed by participants through situated social interactions, with frontline practitioners located at the heart of a dynamic set of relationships, interactions, practices and situations through which those risks were negotiated.

While some medication risks were dealt with through individual strategies, most could only be identified and dealt with by means of collaborative working practices.

In some instances, this meant working directly with fellow nurses to identify and successfully manage some commonly emerging everyday risks, such as being interrupted during medication preparation and administration or not being able to administer medications on time. This was done through coordinated strategies such as ward drug rounds which, like Amy [nurse] suggested, were seen as a useful and systematic method for 'help[ing] with the workload of the nurses' (Interview 2) and also, as Susan [nurse] highlighted, to 'go round in order, to each individual bed, to check when drugs are due and to make sure the drugs are given (Interview 1).

In other instances however, nurses had to interact with other professionals across the hospital to ensure medication safety. These interactions were diverse, involving a range of professionals and practices, such as: getting a dose or drug checked or confirmed, a drug chart re-prescribed, a patient re-assessed, a drug time confirmed or a new drug ordered and supplied. Some interactions were relatively easy to manage and complete, such as making a phone call to check or confirm drug information, while others were more onerous for those involved and could, as a result, make the task at hand more difficult to complete.

However, these interactions were not only used to act upon emerging risks, but important medication-related risks were co-constructed through these interactions.

In paediatrics, many drugs are routinely prescribed and administered 'off-label' with the need in some cases to use drugs that are unlicensed for use in children. This is even more notable in the context of tertiary care, where patients tend to have higher levels of acuity and require more complex treatments. Furthermore, as local experts acknowledged, the fact that existing evidence for the use of medications in children is often scarce or nonexistent opened up the possibility of interpretative/experience-based understandings about some emerging medication-related risks, as Neil [pharmacist] pointed out:

The evidence base for paediatrics is pretty rubbish. You won't find much evidence base for what you'll be doing in paediatrics. You have to go on one or two studies here or there. In some cases you're even going on what the consultant's experience is. If the consultant says, 'I've done this many times and it's always worked for my patients', and within the same speciality one consultant might do something different to the other consultant. (Interview)

Such circumstances required nurses to regularly interact with pharmacists and doctors from various specialities and levels of expertise to triangulate 'expert' opinions with their own assessment in order to establish a shared and reliable enough understanding of medication-related risks to:

- either prevent any potential errors from reaching the patients, as Susan [nurse] noted:

A consultant had prescribed something and we checked it in the BNF and it was twice as high as the maximum that the child could have. So we talked with pharmacy and pharmacy agreed that it was higher than what the child should have. We then had to go back to speak to the consultant. (Interview 1)

- or, as Christine [nurse] highlighted, to appropriately undertake their role as frontline practitioners:

If you're administering the medicine, then you need to know why you're administering that medicine and to be able to explain to the parent and the family as well. (Interview 6)

In this context therefore, medication safety could not just be understood as a managerial construct informed by 'expert' knowledges about risk that regulated clinical practice; but rather as a complex assemblage of risk-related everyday working practices, equally shaped by 'lay' experiential knowledges about risk. These various meanings of risk, as we explore in the next section, were embedded in local professional cultures which mediated how risk was negotiated across different groups of professionals throughout the medication process and how this was experienced from the perspective of frontline practitioners.

Enacting (and embodying) the transition from risk to threat

As noted earlier, medication safety was brought into action through a combination of individual and collective strategies and, furthermore, facilitated by one last important finding: a local professional culture receptive to peer-questioning when it came to medication-related work.

Indeed, health professionals across all the stages of the medication process saw the questioning of prescribing decisions as an added safety net to identify and deal with medication-related risks, for example, health professionals involved with the initial stages of the medication process, such as Steve [doctor], stressed that:

Prescribing medicine safely, for me, is all about team work. No matter how careful or how cautious I am, I know I am fallible. Allowing my team to question me and my prescriptions, I know I am kept safe, consequently our patients are kept safe. (Documentary data - staff intranet video)

Similarly, at the other end of the medication process, frontline practitioners, such as Christine [nurse], saw the questioning of prescriptions as an intrinsic part of their role: 'I think it [analysing a prescription critically] is part of the nurse's role'. (Interview 6)

However, it also became evident that this was not a formally recognised function of nursing staff and, as such, this practice was not exempt from certain tensions:

Alex [nurse]: The nursing staff on the ward have got enough looking after the patients without chasing up the doctors that should have done their job in the first place. (Focus Group 2)

Christine [nurse]: Sometimes, I get a very positive response saying, 'Oh, I'm not sure why' and then you will get responses like, 'Well, who are you? Why are you questioning the prescription chart? That is more a pharmacy role'. (Interview 6)

Nevertheless, questioning prescriptions and acting upon disagreements with prescribers were seen as routine practices and taken very seriously by nurses of all levels. Participants highlighted the importance of discussing, rationalising and agreeing with any decisions made by prescribers before proceeding to prepare and administer medicines, even if for junior staff that meant seeking other routes to act upon any disagreements with prescribers.

Indeed, frontline practitioners' distinctive position at the very end of the medication process, defined the ways in which they navigated this professional culture, operating at the crossroads of risk work and harm. As Tracy [nurse/manager] noted:

When you're administering a medicine, even if the prescription is incorrect, if the prescription hasn't been written particularly well, if the nurse decides to administer it and then there's an error, it's an administration error because the nurse is taking that professional responsibility for it. So they're

the last line of defence, in some ways, before errors reach the patient. (Interview 11)

As the last decision-makers in the medication journey, by agreeing and proceeding to administer a medicine, nurses enact and embody the transition from risk to threat, one that can in fact result in either normal 'safe' care or cause actual 'harm' to the patient. As Amy [nurse] stated:

No matter how good the systems are, if you've signed to say you've given a drug, you want to make sure that it's the right dose that you're giving them and not to harm the patient. (Interview 2)

Such decisions, as noted earlier, were made in the context of a range of social interactions through which medication-related risks were negotiated. One key defining feature of these interactions and practices was, inevitably, the investment of time. Reaching other professionals involved time, even more so in those circumstances where multiple interactions had to be managed simultaneously, as Lisa [nurse] highlighted:

Sometimes [the patients] are under multiple teams. And the surgeon's prescribed them analgesia, but the medical teams prescribe their medicines (...) and you can just be chasing two or three teams at times. (Focus Group 3)

While interactions could range from quick communications to more time-consuming negotiations, there was always an investment of time from the perspective of the nursing staff in initiating and following up each interaction. The elapse of time during interactions initiated by nurses made evident that the construction and management of medication-related risks were also tied to a range of situations, involving a number of ongoing clinical encounters that brought in potentially competing demands or competing rationales for priority-setting, as David [nurse] observed:

Asking for a drug chart to be re-written in their [doctors'] priorities of jobs that they need to do[, it] is probably low. But if you think about your patient's care, it's high. (Focus Group 2)

This often translated into feelings of stress and pressure for nursing staff. Given the relatively rigid time constraints of medicine administration, time spent by nurses in contacting other professionals or waiting for something to be done before their work could be safely completed, together with a sense of dependency on others, could lead to feelings of stress and pressure. As Christine [nurse] noted:

It generates frustration, I think, and stress. A bit of a frustration in the fact that you know the child should have had this medicine one hour ago and you haven't been able to give it. (Interview 6)

These feelings were also associated with a strong sense of personal responsibility due to the possibility of risks actually reaching the patients in the event of an actual error, and the subsequent potential impact on their professional reputation, as Diane [nurse/manager] highlighted:

We make a really big deal of drug errors. It is a really big deal if you have a drug error and everybody that does a drug error, or is involved in a drug error, has a certain level of... they take it badly that they've been involved in a drug error. It's upsetting to them. They're upset about the patient. They're upset about their professionalism. There are whole rafts of feelings and emotions that they go through. (...) We look at them [medication incidents] in relation to harm and then we start to explore how things happened. (...) It's a big deal, so as a nurse, if you're involved in more than three, and there's education and training for each one, you can actually be suspended from giving drugs. And that's a big thing. It's only for a period of time, until you've done some more education and training, but that's a really big label to put on somebody. It's almost like you're a failing professional. There's a big responsibility attached to medications and in order for them to get it right. (Interview 14)

However, despite the stress and pressure that comes with the responsibility of embodying the transition from risk to threat, the risk work gets done, with the organisation being regarded as consistently 'safe' and its key quality and safety metrics such as 'medication incidents resulting in moderate harm' being consistently on track (Documentary data - Quality and Safety Performance Reports, September 2014 - September 2016).

Furthermore, not only does risk work get done to successfully meet the formally established standards of quality and safety performance; but also, as we go on to explore in the following section, frontline practitioners work to actively integrate the requirements of risk work with the particular needs and circumstances of their patients in the context of their everyday working practices.

Integrating medication-related risk work and patient care

The interactional nature of medication-related risk work was evident at the point of care, particularly through a range of tensions that frontline practitioners had to negotiate as part of their everyday working practices, in order to reconcile the logics of risk work and good quality bedside patient care.

In some instances, challenges stemmed directly from interactions with the patients themselves, such as the delays that can be associated with the medication-taking behaviour of paediatric patients. However, the main tensions between health professionals risk-related practices and the delivery of good quality bedside patient care took the form of interactions with the parents/carers of the actual patients, who tended to have an in-depth detailed knowledge about their child's medicines and were interested in continuing to learn about every twist and turn of their child's care, as John [doctor/manager] noted: 'many parents pick up the drug chart and just look at it and read it and find out what drugs the patient's on and learn' (Interview 9).

This was particularly true for those parents/carers whose child had a chronic condition. In such instances, since the child's care was usually managed across organisations, the parent/carer could even be the source of more up-to-date information than the medical records held in hospital. As Tracy [nurse/manager] put it:

Quite often, we're reliant upon the parents communicating, 'This dose has changed, I now give two spoonfuls instead of one spoonful'. We know that, from research that we've done here more recently, for a significant amount of drugs there's a difference between what the specialist here thinks they're on, what the family thinks they're on, and what the GP thinks they're on. (Interview 11)

Equally, during their stay in hospital, it was also usual for health professionals to meet with resistance from parents/carers to relinquish the well-established dynamics of their care; or for parents/carers to find it difficult not to intervene in the event of any medication administration delays on the wards, as Lynn [doctor] noted:

Some of the patients that are long-term patients or have chronic illnesses, their parents are very much like their carers and they can't understand why we have to chase the times of the administration of their drugs and why we're not letting them administer them. (Interview 17)

In such circumstances, the nursing team often sought to tailor the drug regime to what both patients and parents were used to doing at home, like Laura [nurse] highlighted in our first focus group:

We do adapt our medicine charts for what parents do at home (...) parents will discuss with you on admission if it's feasible to give certain drugs at certain times and then they bring you in with their home regime as to what they have at what time and we look to see if that's feasible and fit that around. (Focus Group 1)

However, the logics of medication-related risk work and good quality bedside patient care were not always easy to reconcile. As Hannah [nurse] put it:

they'll be like 'oh she hasn't had it yet and it was due five minutes ago' and for them they're like, it's like five minutes late, which for us if you're five minutes late you're doing really well.. [later adding] you know where they're coming from, you can understand it, you'd probably be the same. (Interview 4)

Indeed, frontline practitioners' empathy and understanding enabled them to routinely articulate appropriate explanations to patients and parents/relatives, bridging the two rationales.

Such explanations could range from descriptive explanations of what is being done to why, translating the underlying clinical rationale in terms of benefits and risks associated with the prescribed medicines, as Christine [nurse] pointed out:

If I give them a medicine, I'll say, 'Well, this is your pain medicine' or I might give them an antibiotic and say, 'This is an antibiotic.' I'll sometimes say to them the importance of taking the antibiotic, even when they go home for the prescribed duration, to promote proper antibiotic usage really and again, I would say if I give them an antacid, or any gastro-intestinal medication, again to be able to explain to them what it does and why they're taking it. (...) and equally, just to tell them if there's any nasty side effects. (Interview 6)

To translating the risks associated with routine practices, as Keith [nurse] noted:

The parent doesn't sometimes want to wake the child (...) [I] just explain to them that it's necessary. Let's say if they have had a really bad surgery and it is pain relief, just explain that they could wake up in lots more pain if you don't give it, so it's better to stay on top of it and usually they understand. (Focus Group 1)

On the other hand, interactions with patients or their parents/carers also had the potential to add to healthcare professional stress and pressure, as Susan [nurse] highlighted:

You're also under the pressure that you know you're being watched by the parent, and that's added pressure to you, because the parent probably knows more about the drugs and more about how the drugs are given and when the drugs are given and how to do that than you do as a nurse. (...) Occasionally they will tell you, if they think you're not doing something

right. But you always know that you're being watched very closely.
(Interview 1)

Knowing that, should something go 'wrong' at any point throughout the medication process, regardless of the cause, frontline practitioners remain the 'face of the system' at the point of care offering explanations and reassuring patients and parents/carers. As Sharon [nurse] noted:

A lot of the times parents are quite understanding [if there has been a medication delay]. But it doesn't stop them getting frustrated, and it's not that they're frustrated with us, it's the system. But because we're the person that's dealing with it, they will take it out on us because we're the person they see. (Focus Group 3)

Discussion

We found that frontline practitioners claimed that they worked within and conformed to formally established medication safety risk management practices; but we also found that actual risk-related practices were not fully encapsulated by normative frameworks (Horlick-Jones, 2005b).

Our findings can be seen as consistent with the current approach to risk management in the NHS. Thus, from this perspective, it could be argued that frontline practitioners were enacting what Reason (2000) would consider a 'system approach' to risk management, with the findings also being congruent with the current approach in the NHS in that the success of what nurses are doing in preventing harm from medication errors does depend on open communication and ability to challenge 'experts'.

However our findings have wider implications if the focus is shifted from (passive) conformity with organisational rules to frontline practitioners more active engagement in risk-related everyday working practices. This shift can provide insights that could be of importance in the further theoretical development of 'risk work' in healthcare.

We found that the rationale underpinning risk-related practices was constructed through a range of social interactions in the context of practitioners' everyday working practices, operating at the heart of a dynamic set of relationships, practices and situations. Thus, medication safety cannot simply be understood as a managerial construct informed by 'expert' knowledges about risk that regulate clinical practice.

In this way, medication safety should rather be understood as a complex assemblage of risk-related everyday working practices that are equally shaped by

'lay' experiential knowledges about risk. This means that an important issue is that the meanings of risk, whether 'expertly' defined or not, are socially constructed in the context of everyday working practices and, therefore, a focus on 'risk work' enables us to problematise the established taken-for-granted meanings of risk in the light of existing rationales underpinning actual practice.

As we have already observed, the conceptualisation of risk in the NHS is informed by a realist approach that defines risk as the likelihood that somebody or something will be harmed by a hazard (Department of Health, 2000, p. xii). The implications of such conceptualisation, together with a risk management system geared towards the collection and analysis of information on incidents, can be understood in the light of what Douglas (2003b) has described as the 'forensic uses of risk', with a focus on the investigation of situations that go wrong as the basis to rethink the allocation of blame. As Douglas (2003b, p. 16) observed:

under the banner of risk reduction, a new blaming system has replaced the former combination of moralistic condemning the victim and opportunistic condemning the victim's incompetence. (2003b, p. 16)

Indeed, questions of risk and blame are likely to remain important in view of the rapid growth of technologies that are expected to improve medication safety in hospital setting, such as electronic prescribing systems, which can afford new opportunities for the construction of risk and allocation of blame (Petракaki, Waring, & Barber, 2014) and reshape how practice can be monitored within organisations (Dixon-Woods et al., 2013). However, the conceptualisation and approach to 'risk' are likely to continue to be central if, as argued by Kemshall (2000), the process of accountability and allocation of responsibility are done in the light of things going wrong. As Luhmann highlighted:

elements such as hope, opportunity, uncertainty, and frankness that determine the situation in which a decision was taken volatilize or prove to have been underestimated when it comes to reconstructing the decision making process after the event. (1993, p. 193)

This connects with the idealised idea of an individualist, rational, responsible self. In contrast, our findings illustrate how the collective, interactional nature of risk-related practices, where core elements such as underpinning rationales or responsibility are contested and negotiated, were defining features of medication safety-in-action in the context of routine practice - that is when things go *well* rather than *wrong*.

Therefore, in this context, embracing 'risk work' has the potential to make visible and explicit a range of risk-related practices that are currently not acknowledged

as such, simply because they cannot be defined or understood in terms of their 'likelihood to result in accidents'. Just as 'safety sciences know more about what causes adverse events than about how they can best be avoided' (Reason, 2000, p. 770) prompting scholars to readdress this balance by studying safety successes, rather than failures, in organisations (Weick, 1987; Weick, Sutcliffe, & Obstfeld, 1999); the study of 'risk work' has the potential to open up a similar line of inquiry in the study of risk in healthcare, by understanding and mapping out how risk work gets done in the context of routine clinical practice and successful outcomes.

Such a move could in turn improve other aspects of risk work identified in our findings, for example, it could legitimise the stress and pressure associated to undertaking the existing informal risk-related practices and the importance of such practices as perceived by frontline practitioners. This could be of particular relevance to nursing staff, given that nearly all medication errors can be directly affected by nursing care (Sears, O'Brien-Pallas, Stevens, & Murphy, 2013; Stratton, Blegen, Pepper, & Vaughn, 2004).

In addition, a focus on 'risk work' could also facilitate the formalisation of the role (and status) of frontline practitioners as 'risk workers' in healthcare delivery, addressing the pressure associated to working across the formally recognised professional boundaries, which can itself pose a challenge to improving quality of care (Powell & Davies, 2012).

It is widely acknowledged that the current model echoes those of the high-stakes industries (such as aviation or nuclear power plants) and the so-called 'high reliability organisations', known to have the best-developed systems for learning from experience. Although these organisations share important characteristics with healthcare organisations, there are also some notable differences. Among these, there is one fundamental difference that tends to be overlooked and which our findings bring to the fore: the meanings and rationales sustaining risk work are mediated through social interactions, including interactions with those 'at risk' - that is the patients and/or their carers, who equally use their experiential knowledge to manage risk with regards to their health (Heath et al., 2016). Thus, one distinct feature of risk work in healthcare is that the 'object at risk' is a co-structor of the meanings and rationales underpinning risk work, one with whom risk workers can empathise and towards whom they have a 'duty of care', one with the potential to 'blame' and 'punish' the risk worker in the context of informal social interactions. Therefore, risk work in healthcare has to be understood in the light of the pressing (and often competing) demands that come with being the 'face of the system' at the point of care, and the inherent tensions risk workers have to negotiate as part of their everyday working practices in order to reconcile the logics of risk work and patient care.

Conclusion

Our findings show that frontline practitioners' medication safety risk-related practices are consistent with, but not fully encapsulated by, normative risk management frameworks in healthcare. Focusing on the emerging logics of actual (rather than pre-defined) 'risk work' in everyday practice, we have shown how the established taken-for-granted meanings of risk can be problematised in the light of existing rationales underpinning actual practice.

An important implication of this approach is that it enables medication safety to be thought through beyond the logics of normative frameworks by which risk is understood on the basis of 'what has gone wrong' following medication-related incidents, to explore risk work in terms of 'what is actually being done' when there are no incidents. This is particularly relevant in view of the rapid growth of healthcare information technologies expected to improve medication safety in hospital settings, such as e-prescribing systems, which also bring about a much greater ability to collect more and more detailed performance data. Therefore, such technologies have the potential to profoundly reshape how risk and accountability are managed and understood - albeit not necessarily. Through such new and enhanced ways by which practice can be monitored in healthcare organisations, idealised individualist notions of risk-related practices and decision-making can become further ingrained into the process of accountability and allocation of responsibility (particularly if risk-related learning continues to be generated in light of things going wrong). In this context, a focus on 'risk work' in everyday routine practice can contribute important nuanced insights to the current debates about governance and risk management in healthcare, particularly when it comes to highlighting the inherently collective nature of risk-related practices suggested by our findings - with meanings and rationales underpinning risk work being contested and negotiated in the context of interactions in everyday practice, including interactions with the 'object at risk' (that is patients/carers) which also becomes a co-constructor of these and represents one key distinct feature of risk work in healthcare delivery.

Thus, a more comprehensive look at how health professionals engage with risk work across the medication process might not only shed light on why and how 'medication errors' and 'adverse drug events' happen, but also enable new pathways to address and manage medication safety in healthcare organisations.

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References

- Beaussier, A.-L., Demeritt, D., Griffiths, A., & Rothstein, H. (2016). Accounting for failure: risk-based regulation and the problems of ensuring healthcare quality in the NHS. *Health, Risk & Society*, 18(3-4), 205-224. <https://doi.org/10.1080/13698575.2016.1192585>
- Charmaz, K. (2014). *Constructing Grounded Theory* (2nd edition). Thousand Oaks, CA: Sage Publications Ltd.
- Day, P., & Klein, R. (2004). *The NHS improvers: A study of the Commission for Health Improvement*. London: King's Fund.
- Department of Health. (2000). *An Organisation with a Memory: Report of an Expert Group on Learning from Adverse Events in the NHS Chaired by the Chief Medical Officer*. London: The Stationery Office.
- Dixon-Woods, M., Redwood, S., Leslie, M., Minion, J., Martin, G. P., & Coleman, J. J. (2013). Improving Quality and Safety of Care Using 'Technovigilance': An Ethnographic Case Study of Secondary Use of Data from an Electronic Prescribing and Decision Support System. *Milbank Quarterly*, 91(3), 424-454. <https://doi.org/10.1111/1468-0009.12021>
- Douglas, M. (2003a). *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. London: Routledge.
- Douglas, M. (2003b). *Risk and blame: Essays in cultural theory*. London: Routledge.
- Dückers, M., Faber, M., Cruijsberg, J., Grol, R., Schoonhoven, L., & Wensing, M. (2009). *Safety and risk management in hospitals*. London: The Health Foundation.
- Farre, A., & Cummins, C. (2016). Understanding and evaluating the effects of implementing an electronic paediatric prescribing system on care provision and hospital work in paediatric hospital ward settings: a qualitatively driven mixed-method study protocol. *BMJ Open*, 6(2), e010444. <https://doi.org/10.1136/bmjopen-2015-010444>
- Farre, A., Heath, G., Shaw, K., Jordan, T., & Cummins, C. (2017). The role of paediatric nurses in medication safety prior to the implementation of electronic prescribing: a qualitative case study. *Journal of Health Services*

Research & Policy, 22(2), 99-106.
<https://doi.org/10.1177/1355819616686995>

- Flynn, R. (2002). Clinical governance and governmentality. *Health, Risk & Society*, 4(2), 155-173. <https://doi.org/10.1080/13698570220137042>
- Gale, N. K., Thomas, G. M., Thwaites, R., Greenfield, S., & Brown, P. (2016). Towards a sociology of risk work: A narrative review and synthesis. *Sociology Compass*, 10(11), 1046-1071. <https://doi.org/10.1111/soc4.12416>
- Glaser, B. G. (1965). The Constant Comparative Method of Qualitative Analysis. *Social Problems*, 12(4), 436-445. <https://doi.org/10.2307/798843>
- Heath, G., Montgomery, H., Eyre, C., Cummins, C., Pattison, H., & Shaw, R. (2016). Developing a Tool to Support Communication of Parental Concerns When a Child is in Hospital. *Healthcare*, 4(1), 9. <https://doi.org/10.3390/healthcare4010009>
- Hillman, A., Tadd, W., Calnan, S., Calnan, M., Bayer, A., & Read, S. (2013). Risk, governance and the experience of care. *Sociology of Health & Illness*, 35(6), 939-955. <https://doi.org/10.1111/1467-9566.12017>
- Horlick-Jones, T. (1998). Meaning and contextualisation in risk assessment. *Reliability Engineering & System Safety*, 59(1), 79-89. [https://doi.org/10.1016/S0951-8320\(97\)00122-1](https://doi.org/10.1016/S0951-8320(97)00122-1)
- Horlick-Jones, T. (2005a). Informal logics of risk: contingency and modes of practical reasoning. *Journal of Risk Research*, 8(3), 253-272. <https://doi.org/10.1080/1366987042000270735>
- Horlick-Jones, T. (2005b). On 'risk work': Professional discourse, accountability, and everyday action. *Health, Risk & Society*, 7(3), 293-307. <https://doi.org/10.1080/13698570500229820>
- Kemshall, H. (2000). Conflicting knowledges on risk: The case of risk knowledge in the probation service. *Health, Risk & Society*, 2(2), 143-158. <https://doi.org/10.1080/713670160>
- Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (Eds.). (2000). *To Err is Human: Building a Safer Health System*. Washington (DC): National Academies Press (US). Retrieved from <http://www.ncbi.nlm.nih.gov/books/NBK225182/>
- Labelle, V., & Rouleau, L. (2016). The institutional work of hospital risk managers: democratizing and professionalizing risk management. *Journal of Risk Research*, 0(0), 1-23. <https://doi.org/10.1080/13669877.2016.1147488>

- Luhmann, N. (1993). *Risk: a sociological theory*. Berlin; New York: Walter de Gruyter.
- Lupton, D. (1999). *Risk*. London ; New York: Routledge.
- NHS England. (2015). *Risk Management Policy and Process Guide*. NHS England. Retrieved from <https://www.england.nhs.uk/wp-content/uploads/2012/11/risk-man-strat.pdf>
- O'Malley, P. (2008). Governmentality and Risk. In J. O. Zinn (Ed.), *Social theories of risk and uncertainty: an introduction* (pp. 52-75). Malden, Mass. ; Oxford: Blackwell Publishing Ltd.
- Parry, A. M., Barriball, K. L., & While, A. E. (2015). Factors contributing to Registered Nurse medication administration error: A narrative review. *International Journal of Nursing Studies*, 52(1), 403-420. <https://doi.org/10.1016/j.ijnurstu.2014.07.003>
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd edition). London: Sage.
- Petrakaki, D., Waring, J., & Barber, N. (2014). Technological affordances of risk and blame: the case of the electronic prescription service in England. *Sociology of Health & Illness*, 36(5), 703-718. <https://doi.org/10.1111/1467-9566.12098>
- Pirinen, H., Kauhanen, L., Danielsson-Ojala, R., Lilius, J., Tuominen, I., Díaz Rodríguez, N., & Salanterä, S. (2015). Registered Nurses' Experiences with the Medication Administration Process. *Advances in Nursing*, 2015.
- Powell, A. E., & Davies, H. T. O. (2012). The struggle to improve patient care in the face of professional boundaries. *Social Science & Medicine*, 75(5), 807-814. <https://doi.org/10.1016/j.socscimed.2012.03.049>
- Power, M. (2004). *The risk management of everything: Rethinking the politics of uncertainty*. London: Demos.
- Reason, J. (2000). Human error: models and management. *BMJ*, 320(7237), 768-770. <https://doi.org/10.1136/bmj.320.7237.768>
- Rothstein, H. (2006). The institutional origins of risk: A new agenda for risk research. *Health, Risk & Society*, 8(3), 215-221. <https://doi.org/10.1080/13698570600871646>
- Sears, K., O'Brien-Pallas, L., Stevens, B., & Murphy, G. T. (2013). The Relationship Between the Nursing Work Environment and the Occurrence of Reported

Paediatric Medication Administration Errors: A Pan Canadian Study. *Journal of Pediatric Nursing*, 28(4), 351-356.
<https://doi.org/10.1016/j.pedn.2012.12.003>

- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, California: SAGE Publications.
- Stratton, K. M., Blegen, M. A., Pepper, G., & Vaughn, T. (2004). Reporting of Medication Errors by Pediatric Nurses. *Journal of Pediatric Nursing*, 19(6), 385-392. <https://doi.org/10.1016/j.pedn.2004.11.007>
- Tulloch, J., & Lupton, D. (2003). *Risk and everyday life*. London: Sage.
- Weick, K. E. (1987). Organizational culture as a source of high reliability. *California Management Review*, 29(2), 112-127.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (1999). Organizing for high reliability: Processes of collective mindfulness. In R. S. Sutton & B. M. Staw (Eds.), *Research in Organizational Behavior, Volume 1* (pp. 81-123). Stanford: Jai Press.
- Wynne, B. (1989). Frameworks of rationality in risk management: towards the testing of naive sociology. In J. Brown (Ed.), *Environmental Threats: Perception, Analysis and Management* (pp. 33-47). London: Belhaven Press.
- Wynne, B. (1998). May the Sheep Safely Graze? A Reflexive View of the Expert-Lay Knowledge Divide. In S. Lash, B. Szerszynski, & B. Wynne (Eds.), *Risk, Environment and Modernity: Towards a New Ecology* (pp. 44-83). London: Sage.
- Yin, R. K. (2014). *Case Study Research: Design and Methods* (5th edition). Thousand Oaks, California: Sage.
- Zinn, J. O. (2008). Heading into the unknown: Everyday strategies for managing risk and uncertainty. *Health, Risk & Society*, 10(5), 439-450.
<https://doi.org/10.1080/13698570802380891>