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National Patient Safety Alerts:

An Exploration of How Trusts Coordinate their Responses

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Introduction

There is emerging interest in how National Patient Safety Alerts (NPSAs) may be optimised amid recognition that the provision of information alone may be insufficient to change Trust practices (CQC, 2018; Lintern, 2018). First introduced in 2005, National Patient Safety Alerts were part of a wider national incident reporting system that sought to identify patient safety issues and, via the alerts, inform NHS Hospital Trusts of the risks and how they may be mitigated. A number of changes have been made in an attempt to improve the functioning of the alerting system, including the introduction of clearer alert documentation. An online public record of Trusts with outstanding alerts to implement was also introduced but whether this has achieved its aim of incentivising Trusts to act on the alerts is unclear. In the summer of 2017 the agency responsible for NPSAs, NHS Improvement, wrote to all NHS Trusts in England to call for a refocusing after it was found that patient safety incidents were sometimes occurring even after Trusts had signed-off a related alert. NHS Improvement are continuing their efforts to make it as easy as possible for senior NHS leaders and staff to act on alerts (Lintern, 2018).

Following discussions between NHS Improvement and Yorkshire and Humber PSTRC, some preliminary exploratory work was undertaken by PSTRC researchers as a basis for a future research agenda. This is presented below. NHS Improvement had already noticed variation in Trust responses from assessing board minutes. It was agreed that a document analysis of Trust coverage of their responses to NPSAs in publicly-available documentation presented a practical and potentially compelling entry point into the topic. Some organisational theorists see the role of boards as being critical to organisational performance (Chambers et al, 2013). Comprehensive board minutes are

also widely held to serve important performance functions, including internal communication and accountability (Peck, 1995). For public organisations in particular, the significance of documenting decisions is potentially greater than private firms because of the more varied and defuse nature of accountability and transparency in the public sector. All Trusts are required to make board minutes available to the public (Freedom of Information Act, 2000), partly to enable individuals and civil society groups to oversee decisions and hold senior leaders to account. It is perhaps unsurprising therefore that Trust documentation has formed the basis of a number of studies (Demb and Neubauer, 1992; Dixon-Woods et al, 2013; Endacott et al, 2013; La Rocker and Howard, 1960; Peck, 1995; Watkins, 2008). Sometimes, board minutes are accessed in this literature as a proxy for some aspect of organisational performance (Watkins, 2008) although there is awareness that what is reported in minutes may not always reflect organisational activities (La Rocker and Howard, 1960; Peck, 1995). In order to address these limitations, the research team decided to substantiate the document analysis with some informal stakeholder conversations about NPSAs with senior leaders.

Methods

Part 1 presents the document analysis of publicly-available Trust documentation, the aim of which was to develop understanding of the diverse ways that NPSAs are covered by Trusts. Two researchers (TM and LA) used Google's site-specific search tool to identify relevant material on the websites of 13 acute Trusts in a single NHS region. This strategy meant that the documents assessed were not limited to board minutes but included any document relevant to an NPSA, such as an internal policy document or communication notifying staff about an NPSA. To make the search manageable, 10 recent NPSAs were focused on of all alert types (warning, resource and directive). Each Trust website was searched for coverage of these 10 NPSAs, using search terms broad enough to capture any relevant material. A matrix was created using Microsoft Excel with 10 rows for the NPSAs and 13 columns for the Trusts, creating 130 possible data points. As the search was proceeding, TM and LA described Trust responses in the spreadsheet and notes were taken of anything unusual in a Trust response. At the halfway point, TM and LA independently developed a coding scheme of types of alert response which they then refined through consensus discussion. They also developed a list of possible explanatory factors for why Trusts had responded in a certain way, including factors that were identified descriptively and some which they inferred from the data. The coding scheme was reviewed by GL and RL before TM and LA applied it to the remaining data in the second part of the search, refining it as appropriate.

Part 2 presents a thematic analysis of the data gleaned from the informal stakeholder conversations. The research team agreed that it was necessary to expand the exploratory work in this way because the search returned a limited amount of data for the analysis. They also observed that the document analysis alone was not revealing the full picture because there were signs that Trusts were undertaking relevant patient safety activity that was not being covered in publicly-available documentation. Hence, conversations with senior leaders and managers were undertaken to ascertain more detail about how Trusts coordinate responses and to ask people doing the coordinating for their appraisals of current arrangements. The sampling strategy was opportunistic

and sought to include people with a prominent role coordinating Trust responses. Because these conversations were informal, exploratory and used to sense-check the initial document analysis, formal research governance approval was not sought and no consent or recordings were taken. People were invited to participate on an informal basis, from the same NHS region of the document analysis. Four people from three Trusts across the region were consulted, plus one informal group discussion involving five personnel from a single patient safety department. TM led the discussions while LA took notes. TM carried out an inductive thematic analysis of the material and a preliminary analysis was presented to the research team and revised on the basis of their comments. As the conversations were not recorded or transcribed, quotations have not been used.

Findings

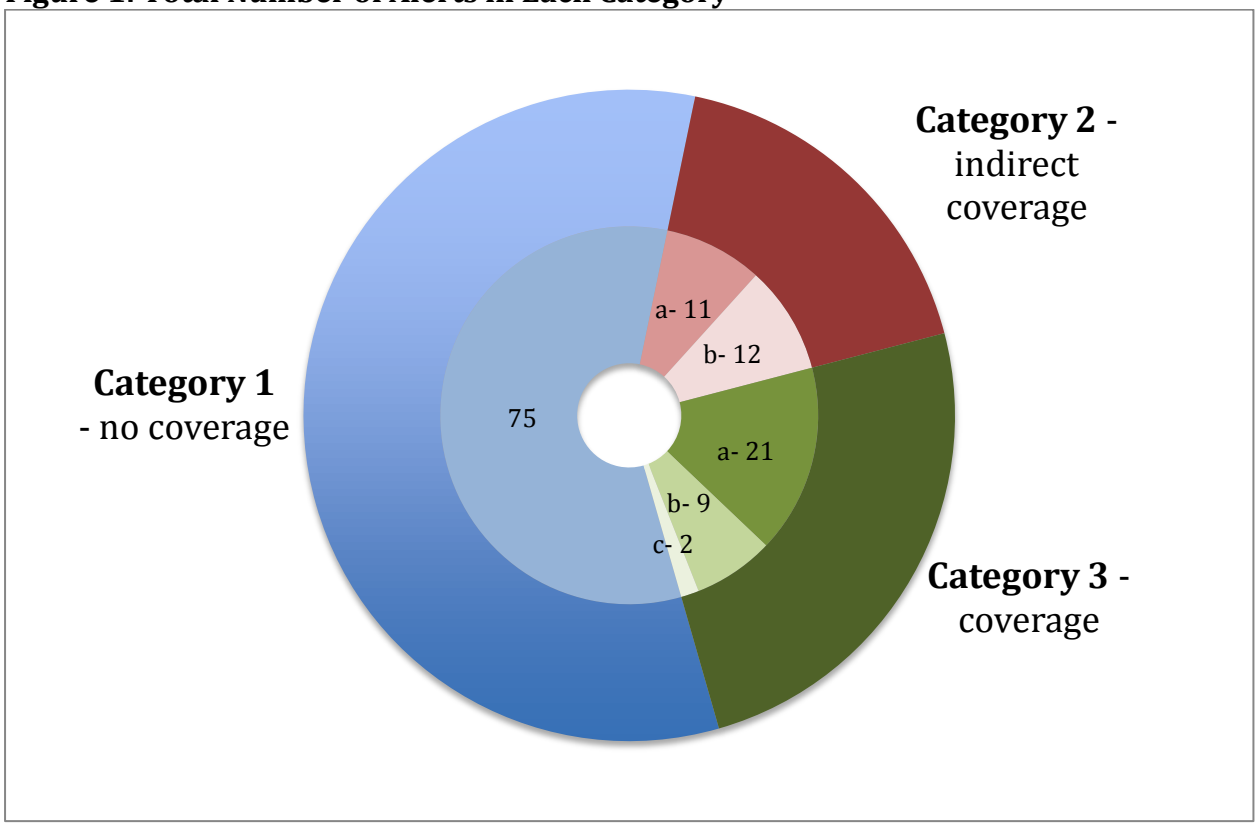
Part 1a – How are NPSAs covered in online Trust documentation?

Trust coverage of the 10 NPSAs in online documentation was categorised as falling into three broad categories and various subcategories:

> **Category 1:** *No coverage* – While all 10 NPSAs included in the search received some coverage, this was highly variable across Trusts with many alerts receiving no coverage at all by individual Trusts.
>
> **Category 2:** *Indirect coverage* – Trust sometimes did not report on an alert directly but relevant issues or actions were discussed in online documentation. This could be either 2a) in the period leading up to the alert or 2b) after the alert was issued.
>
> **Category 3:** *Direct coverage* – Trusts sometimes directly reported on the alert, providing either 3a) a brief mention, 3b) some detail but limited or 3c) comprehensive coverage where each alert action point was clearly evidenced.

The spread of these different response categories across the data set is captured in the doughnut chart in Figure 1. Category 1 (no coverage) was the largest of the categories. Of the 130 possible responses by the 13 Trusts to the 10 NPSAs, 75 did not receive any coverage in online Trust documentation. Category 2 (indirect coverage) included 23 responses, of which 11 were examples of indirect coverage in the period leading up to the alert (2a) and 12 after the alert was issued (2b). 33 out of the 130 possible responses received coverage. Of these, 21 received a brief mention, 9 were covered in more detailed but this was still limited in some way and 2 received comprehensive coverage.

Figure 1: Total Number of Alerts in Each Category



The high rate of no coverage responses (75 out of 130) is perhaps surprising given that the search sought to capture any documentation related to an alert. Yet it is worth remembering that not all Trust documentation is online and thus reachable through the search strategy, while not all relevant patient safety activity will be covered in Trust documentation. As the academic literature emphasises, what is captured in Trust documentation may not reflect actual organisational practices (La Rocker and Howard, 1960; Peck, 1995). This is particularly important to keep in mind when we assess how the category types were spread across the 13 Trusts. Figure 2 expresses variation in Trust responses and in the response types each alert received. The alerts that prompted the most coverage are situated to the left of the figure and the least to the right; the Trusts which had most coverage are situated at the top and the least at the bottom.

Figure 2 reveals significant variation in Trust responses. The quantity of responses ranged from ten (Trust A) to one (Trust M), although Trust A's coverage was mostly only brief mentions of the alerts (3a). Indeed, one of the surprising findings is the lack of association between the quantity and quality of Trust responses. The two examples of comprehensive coverage (3c) identified in the search were by Trusts (Trust E and Trust J) outside of the top 3 in terms of their coverage quantity. Trust J had no coverage for seven of the alerts but its coverage for three of the alerts was of high quality, including two 3bs and one 3c. The figure also reveals variation in the response that each alert received. The Nasogastric Tube alert is a clear outlier, receiving coverage by all 13 Trusts, possibly due to the fact that it required Trusts to publish their action plans in a public board paper. By contrast, the four alerts with the least coverage were covered by just three Trusts. This level of variation prompts the question of why Trusts appear to respond so differently to the issuing of alerts.

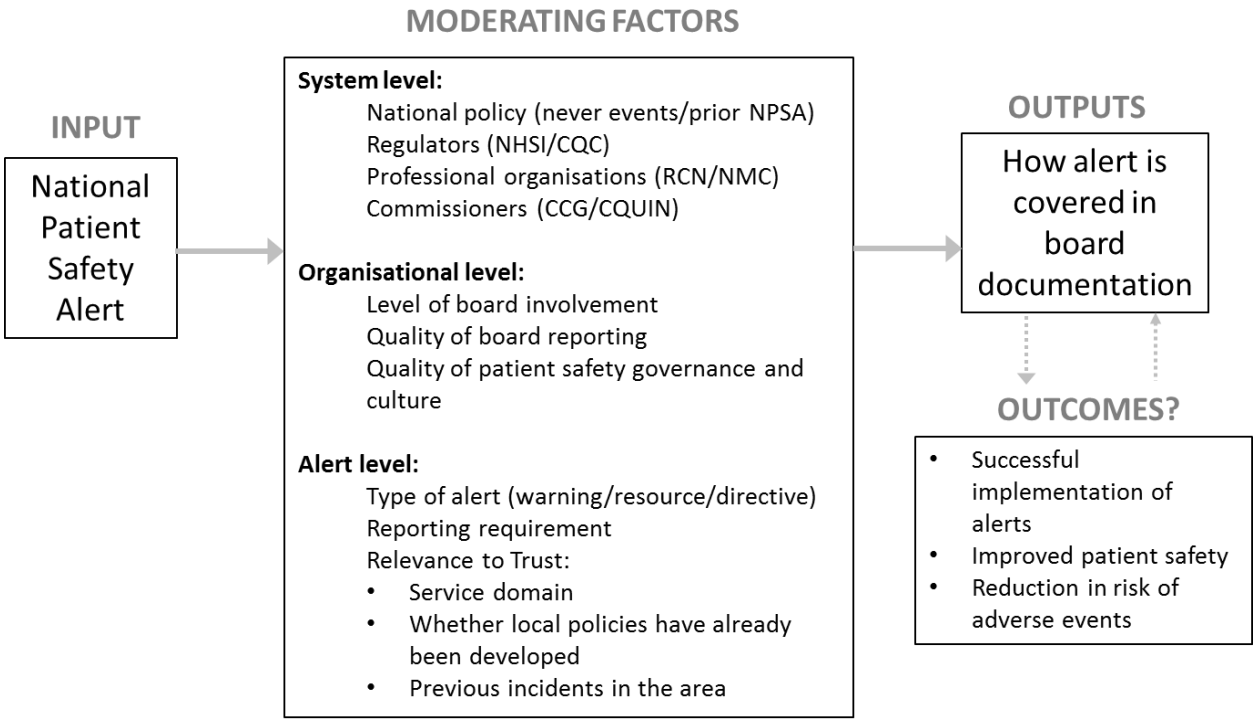
Figure 2: Coverage of 10 NPSAs by Trust

	Nasogastric Tube (resources)	**NEWS2 alert** (resources)	**Oxygen tubing connected to airflow** (directive)	**Open systems + injectable medication** (directive)	**Improving medication error incident reporting and learning** (directive)	**Safer care for full-term babies** (resources)	**Removal of lines/cannulae** (directive)	**Oxygen Cylinders** (warning)	**Parenteral Nutrition in babies** (warning)	**Intrathecal devices for chemotherapy** (directive)
Trust A (10)	2a	3a	3a	3a	3a	2a	3a	3a	3a	3a
Trust B (8)	3a	2b	2b	3b	2b		3a	3a		2a
Trust C (6)	3a	3a	3a	3a		3a	2b			
Trust D (5)	2a	2b			2a			2b	2a	
Trust E (5)	3c	2b	3b		3a					2b
Trust F (4)	3b	3a	3a			3b				
Trust G (3)	3b			2a					2a	
Trust H (3)	3b		3b	3a						
Trust I (3)	2a	2b				2b				
Trust J (3)	3c	3b			3b					
Trust K (2)	3a				2b					
Trust L (2)	2b			2a						
Trust M (1)	2a									

Part 1b – What factors explain how NPSAs are covered?

Figure 3 presents a model for explaining why Trust coverage of NPSAs in publicly-available documentation can differ markedly, with the issuing of a NPSA modelled as an input and coverage modelled as an output. The moderating factors in the centre of the model explain the level of variation we see in Figure 2 above. An outcomes box does feature, but dotted arrows between the outputs and outcomes boxes convey that the relationship between the two remains unsubstantiated. That is, we are not assuming that comprehensive coverage in publicly-available documentation is associated with the successful implementation of alerts and improved patient safety outcomes.

Figure 3: Understanding coverage of NPSAs in Trust Documentation – A Model



The moderating factors have been categorised as exerting influence from the system level, organisational level or alert level. System level factors shaped Trust behaviour but emanated from the broader policy environment. For example, NPSAs were sometimes discussed in relation to national policies such as never events or relevant stakeholder organisations. Alerts were also sometimes reported as having been discussed with CCGs while the CQC and professional organisations were prominent in the data.

Factors identified as shaping Trust responses at the organisational level include the level of direct board involvement in overseeing Trust responses. For example, even though Trust A in Figure 2 may not have had an example of 3b or 3c coverage, the brief mention (3a) that most of the alerts received was in board minutes. It appears that Trust A has a dedicated time slot to discuss NPSAs at the most senior level which has, in turn, shaped the Trust's coverage of NPSAs in publicly-available documentation. In addition to this variable, the quality of organisational reporting differed significantly which may explain some of the variation. Some Trust websites housed meticulous records of agendas, minutes and policy documents of boards and even lower-level

committees whereas others were less comprehensive and sometimes difficult to navigate. Finally, while coverage is only an imperfect proxy for actual patient safety practices, board minutes are still important for organisational performance and public accountability (Peck, 1995). It therefore seems reasonable to include the quality of patient safety governance as a factor that affects Trust coverage in publicly-available documentation while recognising that the relationship between the two, and any relationship to outcomes, requires further elaboration.

Besides factors at the system and organisational levels, specific characteristics of the alerts themselves had a clear impact on Trust coverage. The document analysis could not explore certain crucial questions at the alert level, such as how the complexity of the changes Trusts are asked to make shapes their responses. Notable alert level factors it could identify include the type of alert, with warning alerts receiving least coverage. We have already mentioned how the requirement for the action plan for implementing the Nasogastric Tube alert to be reported in board minutes may explain why all 13 acute Trusts covered it, although 4 of the Trusts still did not directly refer to it. Some of the missing data points in Figure 2 could also be explained by the relevance of the alert to individual Trusts, with some being limited to a specific service domain (e.g. the parental nutrition in babies alert for maternity services). Finally, whether local policies are already in place or whether a Trust has had an incident in the area were identified as additional and potentially important moderators. Many of the instances of indirect coverage were revisions to existing Trust policies in ways that preempted the issuing of an alert, suggesting a high degree of awareness of the issue. There were also examples of major QI projects in response to an associated never event. It is likely that the NPSAs were perceived to be highly relevant in such cases, which has, in turn, shaped how Trusts have responded and how their response has been covered in publicly-available documentation.

Part 2 – Stakeholder Views on How Trusts Coordinate NPSA responses

4 main themes were summarised in the analysis. These seek to convey how Trusts coordinate NPSA responses and to summarise the appraisals of people performing a "coordinator" role.

Trust processes for coordinating responses to NPSAs are complex, networked and varied: successful implementation hinges on informing and motivating the right people at the right level

From the point at which they are received by a Central Alerting System (CAS) Officer to their being signed off by Trusts, a myriad of individuals, departments and committees can be involved in the coordination of an alert. Each alert follows a unique pathway and the complexity of each pathway varies. Alerts specific to a particular department or service are simply forwarded onto a relevant clinical or departmental lead while the coordination of more complex alerts is achieved via committees to secure the involvement of multiple staff groups. There was also considerable variation across Trusts as to the people and departments involved in this process, as well as variation in the roles of boards and sub-committees.

Although the staff we spoke to were aware of the complexity of their Trust's processes, they generally viewed them favourably. The networked nature of the arrangements appeared to facilitate a sense of ownership and responsibility among the people involved, while peculiar aspects of Trust arrangements were seen as befitting their context. In one Trust, the CAS Officer was housed in the estates department which was said to make sense because of the expertise built up in that department. Yet, challenges were identified to achieving coordination through these networked arrangements. A key informational challenge related to getting the information to the right person for them to act, something that was more difficult for more complex alerts because of the amount of people involved and also trickier in larger Trusts. The reverse of this problem is that of getting accurate information from the frontline to senior managers about the changes made for assurance purposes. Intertwined with these informational challenges is the motivational challenge of changing peoples' behaviour in accordance with alert requirements. This could be particularly challenging when alerts seek change to an entrenched clinical practice.

The level of board involvement is more extensive than appears from the outside but roles and responsibilities are typically informal with responsibility delegated to senior managers

Board involvement in the coordination of the alerts was mostly at arm's length but influence was still exerted by the executive tier. A common approach was for senior executives or senior clinical staff to be informed of the status of alerts while responsibility for developing and overseeing implementation strategies was delegated downwards to the sub-executive level. The precise details of action plans were rarely discussed formally at board level and were therefore unlikely to be captured in formal Trust documentation.

This relationship of delegated authority was seen as appropriate by board members and senior managers alike. There was a shared concern that boards are at risk of being "clogged up" with ever-increasing demands. Individuals at the sub-executive level also expressed a sense of pride and ownership in their coordinating role. While senior executives were not involved in the minutiae of Trust action plans, they could be called on if problems were encountered. Executive authority could, for example, be sought to persuade people on the frontline to make a change. The Nasogastric Tube alert's requirement for a board response was praised by some senior managers for having raised awareness of a vitally important patient safety issue that was difficult to act on. But some doubted whether this had led to a more robust response from Trusts and they did not believe that all alerts should be directed at boards. More important than executive authority was having a collaborative culture characterised by high levels of trust. Having managers with past clinical experience in their "coordinator" role was also deemed important for engaging clinicians.

NPSAs and the CAS system are viewed favourably but sub-executive managers require better implementation materials to successfully change behaviours

The NPSA system as a whole had a high degree of legitimacy among participants and was perceived as well-functioning. Of all the alerts which Trusts receive, NPSAs were seen as having the best design and were viewed favourably because they aren't overly

prescriptive but allow flexibility in the formulation of action plans. There was also praise for recent efforts to reserve NPSA status only for critical patient safety risks while the three-fold classification scheme, consisting of warning, resource and directive alerts[1], was viewed favourably for having introduced flexibility in how time-critical patient safety information is disseminated through the system.

People in a "coordinating" role would like more information, including examples of best practice, regarding how to roll out changes across NHS Trusts. There was recognition, however, that this may be difficult for newly emerging risks. One proposal was for more staff-facing videos in which clinicians make the case for change because "clinicians will listen to clinicians". Senior managers also had questions about the process and criteria deployed at the national level for designating alerts. They emphasised the importance of ensuring that all alerts are evidence-based and that clinicians and royal colleges are involved where possible. For, getting clinician buy-in is more difficult when alerts are not perceived as having the backing of clinical colleagues or when the evidence-base is contested. There was also some frustration among senior managers that what it takes to achieve full implementation is sometimes underestimated. An NPSA alert for the wrong selection of orthopaedic fracture fixation plates had covered far more people than originally estimated so that actioning the alert had been extremely resource-intensive.

Macro-level factors shape implementation/outcomes and efforts to improve alerts should reflect this

Conversations about what could be done to improve NPSAs/CAS often centred on wider issues that were only indirectly related to the implementation of alerts. Although NPSAs were praised for becoming more selective, a common complaint was that Trusts receive too many alerts from a variety of sources, causing "alert fatigue". Some of these alerts bypass CAS altogether, creating problems because they do not get on a pathway at all but go to isolated individuals who do not know what to do with them. A lack of resources, staff and service pressures, high staff turnover and the inevitable complexity of healthcare were also identified as complicating implementation, ensuring that Trusts can change practices appropriately but still experience an incident. For this reason, proposals for improving the alerts could be far-ranging, including enhancing the training of staff in patient safety, greater investment in Quality Improvement and regional networks for sharing learning. There was also some concern that, in their efforts to improve NPSAs, NHS Improvement would adopt a more top-down, regulatory approach that would unsettle existing networks and relationships at Trust-level. Yet, there was sympathy with the challenge confronting policymakers in this regard. There was recognition that not all Trusts have effective arrangements and some may require a top-down approach in order for them to take NPSAs more seriously. One proposal here was for the CQC to have a greater role in accessing the quality of Trust patient safety governance in relation to NPSAs.

[1] "Warning alerts" warn Trusts about a patient safety issue when it is first identified, "resource alerts" inform Trusts about possible courses of action that are as yet fully evidence-based and "directive alerts" prescribe an evidence-based change.

Concluding Remarks

The above exploration serves as a reminder of the need to go beyond surface appearances to truly understand phenomena. While the initial document analysis revealed very little in terms of how Trusts coordinate alert responses, the informal conversations yielded evidence of highly elaborate networked arrangements for managing NPSAs at Trust-level. The potential of spontaneously emerging networks is now widely recognised in the field of public administration (Ostrom, 2010; Rhodes, 1996). Networks, according to this literature, have a unique capacity to facilitate trust and collaboration while utilising local knowledge and expertise in the solution of complex policy problems. In our case, people at the sub-executive level often had a high degree of pride in their work and relationships between them and frontline clinicians had been built up over time. While from the outside it may appear that Trust boards are not involved, we found examples of boards overseeing alert responses at arm's length and being available to senior managers if they needed assistance. Neither executives nor senior managers wanted senior executives to take on a more prominent role and there was some concern that, in their efforts to improve NPSAs, policymakers would adopt a more top-down, regulatory approach that would unsettle existing networks and relationships. Yet, there was sympathy with the challenge confronting policymakers amid recognition of the need to address the inadequate approaches of some Trusts.

NHS Improvement's announcement that they intend to work with senior NHS leaders and staff to make it as easy as possible for them to act on alerts is therefore timely (Lintern, 2018). A crucial part of this will be optimising the alert documentation but our exploration also points to a myriad of wider factors that moderate Trust actions. This is consistent with a recent CQC report into Never Events which highlighted the fundamental importance of effective leadership and culture to high-quality patient safety governance. Our exploration also chimes with the CQC's call for changes across the healthcare system, including the setting-up of forums for Trusts to share best practices and staff training in patient safety (CQC, 2018). What the CQC report does not provide, however, is more specific details regarding what optimal Trust arrangements look like for coordinating never event compliance/alert responses and how senior leaders might replicate them within Trusts. Specifically in relation to NPSAs, there is a need for further research to understand more precisely what roles, processes and relationships are required to secure effective responses. More details are also required as to where errors can arise, what highly performing Trusts currently do to manage them and how all Trusts might be supported to achieve best practice.

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