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Embedding learning from adverse incidents: a UK case study

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Abstract

Purpose: This article reports a UK regionally based study that uncovers what has worked well when learning from hospital adverse incidents. It reviews methods, identifies strengths or weaknesses and explores a database as a tool to embed learning.

Design: All adverse incidents reported between 1st June 2011 and 30th June 2012 by staff in three UK National Health Service hospitals were documented. One root cause analysis report per adverse incident for each individual hospital was reviewed by an advisory group. Using reference terms supplied, advisory group feedback was analysed using an inductive thematic approach. Emergent themes generated questions that informed seven in-depth semi-structured interviews.

Findings: Time and work pressures were identified as barriers to adverse incident investigations as quality enhancement tools. Methodologically, one weakness was that no criteria influenced the techniques used to investigate adverse incidents. Sharing learning, using a database as a tool to embed learning across the region, was not supported.

Practical implications: Softer intelligence from adverse incident investigations could be usefully shared among hospital staff via a regional forum.

Originality/value: A new database, as a tool to facilitate learning from adverse incidents across the health economy, was not supported.

Introduction

The study informing this article aimed to develop a regional health economy-wide system for embedding lessons learnt from serious incidents and never-events into practice. In the UK, adverse incidents, such as wrong-site surgery, are reported by trust/hospital staff (a trust is an English National Health Service organisation generally serving either a geographical area or a specialised function) to the National Reporting and Learning System, which is a central patient safety incident database (Alexander *et al.,* 2015). The system adopts an integrated approach to learning from serious incidents by ensuring that lessons learnt by National Health Service (NHS) staff are properly fed back to improve service delivery across the whole health service (Department of Health, 2007). However, a big gap exists between recommended and actioned plans (Wallace, 2010). Consequently, we aim to reduce this gap by presenting a study conducted in response to never events and level 2 serious incidents in three West Midland NHS trusts, serving just under 1.1 million people (Black Country NHS Foundation Trust, 2016).

Study objectives

Adverse incidents requiring investigation are consistently underreported (Shaw *et al.,* 2005; Hutchinson *et al.,* 2009; Noble and Pronovost, 2010) and reporting/feedback systems across different NHS hospitals are highly variable (Renshaw *et al.,* 2008; Goldsmith *et al.,* 2015). In response, the National Reporting and Learning System was established in 2003 to achieve a consistent and systematic approach to reporting and learning from adverse incidents (Williams and Osborn, 2006). However, within this system, there is little or no systematic follow-up intended to prevent specific failures reoccurring (Wallace, 2010). Moreover, the system is limited because 'learning' is merely collected and collated from patient safety incidents (Wallace, 2010); i.e., it does not monitor or support how learning points and systemic recommendations are embedded into practice. Consequently, Centre for Health and

Social Care Improvement, Wolverhampton University, England researchers' objectives were to:

- Highlight incident investigations as tools for quality enhancement.
- Review incident investigation methods - identifying their strength and weaknesses.
- Discover what worked well in setting up investigative terms of reference (ToR).
- Explore a systematic approach oriented towards embedding learning from serious incidents.

The study (August 2012 and February 2013) built on extant documented root cause analysis (RCA) conducted for serious incidents in three NHS Trusts during June 2011-June 2012. Initially it was envisioned that researchers would investigate only never events; however, during data collection, it emerged that no never event had occurred in two trusts in the last year. Consequently, level 2 serious incidents, which had occurred in our time-frame, replaced never-events. This approach was rationalised by the fact that the same processes apply to how lessons are learned from level 2 serious incidents and never-events. Therefore, we situate learning from incident categories as transferable and refer to both groups as adverse incidents. Owing to the study's sensitive nature, we allowed lengthy implementation time to enable participating managers to address issues identified. Implementation time influenced our decision to publish three-years post study. Ethical approval was obtained from the University of Wolverhampton and all participating trusts.

Design

An advisory group: experienced quality leaders from the region and managers from three participating trusts was convened to serve as an expert reference group to interpret issues from a clinical, patient safety and administrative perspective. All adverse events reported between 1st June 2011 and 30th June 2012 by managers in three Trusts: A - an acute trust; B - an ambulance trust; and C - a mental health trust were analysed. One RCA per adverse incident from each trust was selected, anonymised and sent to the advisory group, together with ToR, to: (i) appraise RCA report quality (as working documents to help embed learning); (ii) compare RCA approaches used by the investigating team; and (iii) consider action plans as working documents to help monitor impact and drive quality. The RCAs were selected on their frequency (highest), occurrence date (most recent) and the RCA report (comprehensive reports against 24 and 48 hour reports). Advisory group members provided feedback, which was analysed using an inductive thematic approach. Emerging themes generated questions (Appendix 1) that informed follow-up semi-structured interviews with advisory group members. Seven in-depth semi-structured interviews were conducted to obtain incident details and their accompanying RCAs from clinical governance, patient safety and administrative perspectives. These interviews were analysed by adopting an inductive thematic approach. Coding reliability was addressed by using more than one coder to review coding, which ensured that researchers were coding accurately and consistently.

Findings and discussion

Incident investigations as tools for quality enhancement

Exploring factors that engage staff in adverse incident investigations, 'trust' was identified as a key issue:

> People don't share because they are scared to give information to each other. You need … an open relationship; we need to develop open relationships that are based on trust (Deputy Chief Nurse – Quality and Safety).

Respondents also construed 'trust' as the potential for staff to report incidents without retribution:

> I think there is something about people feeling safe … to be able to talk through maybe what their part is although it is … confidential, they can tell you everything (Clinical Governance Manager).

This suggests that in maximising incident investigations fully as tools for quality enhancement, frontline staff need to be educated on the ethos behind incident investigations. Managers should ensure that the drive is to promote an organisational culture, which is favourably disposed towards learning lessons from serious incidents, as opposed to victim blaming. However, 'time' was a barrier to using incident investigations as tools for quality enhancement. Respondents indicated that the time for conducting investigations often directly affected the extent to which investigators explored issues:

> The complexity of an incident may require a multidisciplinary approach, which the statutory reporting time does not account for (Service Head).

'Work pressures' were identified as an additional barrier, which mitigated against incident investigations being used as tools for quality enhancement:

> If we've got a serious incident [SI] to be investigated and we've got to get allocations [total incidents to be examined] to investigators and we've got a limited ... investigators, then obviously work pressure and then doing their day job, that can, I suppose be a barrier to conducting an in-depth investigation (Clinical Governance Manager).

Work pressure impacts on incident investigations indicates the need for providers to consider protected time for investigators, which would minimise the risk of having an investigator's day job impinge on an on-going investigation. Similarly, 'training' was also identified as another barrier that affected investigations and contributed to the failure to identify root causes:

> When there is a misunderstanding between a contributing factor and a root cause, I think misidentification can be [among] the biggest factors in getting to the root cause, and I think that is almost a user error (Clinical Governance Facilitator).

Two from three trusts had a group to scrutinise all investigation reports - ensuring that root causes have been identified. Where investigation reports wrongly identify root or contributory causes, this group reviews the report and sends it back to the investigators with suggestions on how to improve the document and identify the incident's key causes. Whilst this approach has advantages, it may affect the investigating team's independence. Moreover, scrutiny panels assess the investigation reports, but do not address the underlying requisite skills that contribute to investigators not identifying root causes, which indicates a broader need for training adverse incident investigators to be evidence based and contextualised to patient needs.

Methodological strength and weakness

We found that no methodological criteria influenced investigator decisions. Surprisingly, investigatory techniques were adopted owing to familiarity with the technique and not applicability to the incident investigated:

> Fishbone analysis tends to get used quite a lot as well and I think that is because investigators feel more comfortable with those tools (Clinical Governance Facilitator).

Worryingly, where investigators adopted a method to suit an incident's complexity, this decision was not reached independently:

> As we are going through the investigation, I might talk to somebody about how we might get the most useful information or what will be the most helpful way of getting to really understand the cause of the incident that we are looking at (Service Head).

Improved training for adverse incidents investigators is required. The decision to adopt a method based on familiarity symptomises investigator ignorance about RCA limitations, which could be addressed by ensuring that training for investigators appropriately explores RCA strengths and weaknesses. Additionally, a section could be added to adverse incidents reports on the method's rationale, which provides assurance that the decision to use a technique was reached after carefully weighing its strengths and limitations in context.

Investigative ToR: what worked well?

A committee decided ToR in Trust C, which was not the case in other Trusts. In Trust A, investigative ToR were usually generated by a division head or an individual in a higher or equivalent clinical position. In Trust B, clinical leader recommendations guided the investigating team when the decision to investigate an incident is taken. In Trust C, the practice was to have a strategy meeting attended by, for example, associate directors, clinical governance leader and service team manager to identify the ToR and to decide the investigators to be used. Pre-setting investigatory ToR, positively enhances quality as it ensures that investigators are set reference terms, which ensure that an incident's likely causes are identified. Investigators also recommend ways to prevent re-occurrence, which ensures that specific issues are flagged that may not be directly connected to the incident under investigation, but may have potential, in a different context, to trigger the same incident. However, this approach has limitations, which could potentially limit the investigating team from exploring issues not contained in their original ToR, but which could potentially have caused an incident:

> I suppose one … barrier we've got is that sometimes these ToR are a bit limited because it is our initial thoughts that are being investigated, so I think that is something we've got to work on, getting our investigators to design their own questions (Clinical Governance Manager).

The ideal scenario will be for investigators to start adverse incident investigations using suggested ToR in the first instance and subsequently construct their own terms on an ongoing basis during the investigation. This approach requires skilled handling, which must be addressed in the adverse incident training provided to investigators. Whilst we observed that investigating adverse incidents in all trusts, commissioners were encouraged to ask for specific terms to be investigated, we nonetheless uncovered that there was little unanimity regarding the commissioner's active involvement in investigating adverse incidents. A justification for active involvement was that participation would limit the extent to which

commissioners intervene in on-going investigations as they will be party to the constraints associated with investigations:

> I would like commissioners to be involved in the investigation as well, because … it helps when it comes to identifying root causes, we can do it quite quickly and in a timely manner because the commissioners aren't having to come back and say why haven't you talked about that (Deputy Chief Nurse – Quality and Safety).

Opposition to commissioners' active involvement revolved around them breaching their roles as service commissioners:

> I think what they have as an on-going thing for me seems sufficient. They are not our managers; they are our commissioners so in terms of them having lots of input, then that would almost seem like they are managing us and that isn't appropriate (Service Head).

Commissioners need to agree investigative working arrangements with providers during contract negotiations. This will help clarify the circumstances in which commissioners could become part of an on-going adverse incident investigation.

Systemic approach to embedding lessons from adverse incident investigations

When respondents were asked to say what systems they would like to see in place to facilitate learning, we observed that they addressed this question in a database context:

> If I look at how we are using our embedding lessons database for sharing information and making sure everybody sees those recommendations and thinks about how it applies to them, sometime it does and sometimes it doesn't but at least they've looked and checked and thought about it. I think, the principle is a good one because it is about having a place where we can share information and evidence what we are doing … to meet that standard and mitigate that … incident happening (Service Head).

Respondents also indicated that a database creates healthy competition amongst trust managers in the region:

> And I suppose that [database] might generate healthy competition as we might say hang on we are not populating much here and maybe that will open questions as to why we're not seeing information coming from different trusts. Maybe that will be a driver there (Clinical Governance Facilitator).

Importantly, with increasingly constrained resources available to NHS managers, adopting a database to facilitate learning across the region can lead to economy of scale. Measures adopted in a trust in response to learning from a serious incident could be adopted elsewhere, leading to savings in cost and improvement in patient safety:

> There are probably lots of areas where if we are sharing learning, this could maybe prevent something from happening somewhere else if we are sharing that with another organisation (Head of Assurance).

However, there was little unanimity regarding a database as a tool for sharing learning from adverse incidents. Opposition to a database was about duplicated functions:

> I … recommend caution over the recommendations for another database. Trusts usually have their own internal databases and are required to report through the National Reporting and Learning System and the Strategic Executive Information System [NRLS and STEIS]. Another database, which appears to be limited to a single area, will present entry difficulties for [several] reasons. It seems logical to adopt an existing national database (Risk Manager).

When respondents were asked how softer intelligence generated from learning could be shared without a database, they indicated that conferences could help:

> I think there are grounds for a regional forum. if we've got a regional talking chapter [regional conference] that met [quarterly or half yearly], where we are taking lessons learnt, discussing cases, then I think that is one way of getting the softer information because people talk, databases give you information, but you do not necessarily get the subtleties around that (Quality Director).

Respondents suggested that conference organisers must ensure that attendance is by people who can share and disseminate learning within their organisation:

> How do you share the effectiveness of the event? Are we pitching it at the right level? Sending a risk manager to something where they are going to come up with a conclusion that yeah, we've got to do this, is it pitched at the right level? If it is risk mangers that are attending, are they the right people to be attending? I think if it is commissioning led, you need to be thinking about the director for quality (Regional Head of Risk and Governance).

Additionally, bringing together trust managers at a conference, organisers must ensure that shared learning is applicable to all attendees:

> My question around effectiveness would be … what benefit it would be for us attending this conference because actually, unless it is something like communication, which you already know you don't tend to pick up anything that you can transfer across (Regional Head of Risk and Governance).

More ways to share softer intelligence from adverse incident investigations are needed. These should be explored with consideration given to limitations.

Conclusion

A negative feature identified by staff engaging in our study was that incident investigations did not report when patient notes were secured after the occurrence of an incident. We maintain that it is good practice for patient notes to be secured to prevent altering facts after an incident and advocate that these notes are held immediately after the decision is taken to investigate an incident as a serious event. We also identified that adverse incident investigations by only one investigator was a weakness, which does not allow a multidisciplinary approach that investigations into complex incidents require. Using only one investigator encourages bias, which more than one investigator overcomes. We found that actions implemented in response to adverse incidents needed evaluating. Commissioners, therefore, must ensure that measures are put in place to determine the extent lessons from adverse incidents have been embedded into their respective practices, which ensures that

learning internally is standardised, which could serve as a spring board for exporting learning.

Commissioners were not consistently seeking assurances that learning from adverse incidents had occurred. Usual practice appears to be demonstrating to commissioners that an adverse incident had not reoccurred. Whilst we acknowledge that this demonstrates learning from adverse incidents, we advocate that this learning be demonstrated by providers reporting action plans quarterly and how they propose to audit these actions at perhaps half yearly intervals for the first year after implementation. Such reporting provides assurances that learning from adverse incidents are embedded internally post incident. Importantly, we advocate that the requirement to report be contractually agreed between providers and commissioners.

Whilst we do not advocate a lessons database, it is important that salient points mitigating against the database be addressed if such a system comes into play. For it to be effective, in the first instance, the database requires ownership from commissioners and commitment from providers to interact with the system. Commissioners must first recognise the resource implications and consequently make a cost benefit case that justifies creating such a system. This case must also clearly show the difference between new and existing databases, which providers are statutorily obliged to report and learn lessons. Finally, softer intelligence from serious incidents investigations could be shared through a regional forum held quarterly and designed for clinical risk leaders. This forum should be led by the regional lead commissioner with a mechanism to ensure that learning is cascaded by attendees into their respective organisations.

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Appendix 1: Embedding Learning from Root Cause Analyses: Interview Schedule

Method

- What criteria do you use in deciding the method used to conduct an RCA?
- What are the barriers to identifying root causes? How can these be addressed?
- Who suggests and agrees the ToR, RCA scope and level? What changes would you like to see to this arrangement?
- What input do commissioners have into the serious incident investigation ToR?
- Would you like commissioners to have more input into setting investigation ToR? If no why? If yes, then why and how could this be achieved?

Embedding Learning

- How can RCA outcomes be used for quality enhancement?
- What systems would you like to see put in place to facilitate learning from RCA across the health economy?
- Would an embedding lesson database facilitate this objective? Prompt: If yes, then how do you propose a database should work across the Black Country? If no, then why?
- Without a database, what else can we use to capture and share softer intelligence from RCA lessons?
- What measures can commissioners put in place to improve assurance about embedding lessons from serious incidents?
- In your opinion, what factors could mitigate against sharing learning from serious incidents across the Black Country?

Is there anything we have not covered that you would like to address?