Understanding how work as done of incident investigators supports a safety-II approach

Brook Howells[1]

[1] Loughborough University, UK (study location), University of Leeds (current)

SUMMARY

The Patient Safety Incident Response Framework (PSIRF) launched in 2022 aims to improve healthcare safety through improved learning from incidents. Effective investigations are a critical part of safety management and one area that requires further research is in how incident analysis can take a safety-II approach to understand how systems adapt to maintain safety and what enables operational staff to have positive adaptive capacity. This study utilised appreciative inquiry to assess the work as done of investigators, in particular relation to how they identify positive adaptive practices. Qualitative interviews with investigators and safety specialists from safety-critical industries were used to identify current methods and practice, plus perceptions of how safety-II might be enabled in investigations. The main findings were that investigators already identify positive adaptive practices by operational staff, although it is not a priority focus and minimally reported. There was less evidence that current practice facilitates greater understanding of factors that enable positive adaptations. The diversity of investigation methodologies used and the value of multi-disciplinary investigation teams was a common theme. The impact of safety-II on kindness – both within investigations and for wider cultural change – was also a key finding, although there was variation between industries that merits further analysis. This study has implications for how investigative practice and skills are taught and refined, and how safety-II might be integrated within wider safety campaigns.

KEYWORDS

Investigations, Safety-II, PSIRF, positive adaptive capacity

Introduction

A safety-II approach involves understanding variation in practice and how operational staff use positive adaptations to maintain safety within complex systems (Hollnagel 2014). Effective identification and analysis of these adaptations in practice is challenging (Lyng et al 2022, Verhagen et al. 2022), however there is progress in both observation of adaptations in everyday work (Patriarca et al. 2017) and in learning from positive as well as negative incidents (Kelly et al. 2016). Although healthcare has limited resource for system analysis, the new Patient Safety Incident Response Framework shifts the focus of investigations on to system-based learning and presents an opportunity to embed safety-II in investigative practice. Previous studies indicate that investigations already reflect some safety-II elements (Anderson and Watt 2020, Accou and Carpinelli 2022) suggesting that there is a base level of understanding within investigative practice that could be nurtured.

Aims

This project aimed to understand how current investigation practice complements a safety-II approach, and to elicit investigators' perspectives on the benefits of safety-II for investigation and how to enable more safety-II practice in future.

Methodology

Semi-structured appreciative inquiry interviews (Reed 2006) were undertaken with 11 participants who had experience of undertaking incident investigations in safety critical industries (predominantly rail and healthcare). Participants were selected to represent a range of investigation experience, from those who were trained and employed to be investigators, to those who had only been occasionally involved in investigations as an adjunct of their main employment. One participant had experience of being involved as an employee of an organisation being investigated.

Participants were asked about the methods they used and why, including whether they utilised those identified by Anderson and Watt (2020) as supporting safety-II (see Table 1). They were provided with information about safety-II, if required, and subsequently asked their opinions on how a safety-II approach might benefit investigations, and what would enable investigations to incorporate more safety-II and emphasis on adaptations. Two further interviews with safety specialists from rail and healthcare helped contextualise and validate the findings for each industry.

Findings

Current practice includes many diverse methods used for evidence collection, presentation and analysis, and several participants reported purposefully utilising multiple methods. This diversity was valued as good practice, enabling understanding incident context and system influences. A diverse multi-disciplinary team was also valued for the breadth of insight it brought.

All investigators were utilising approaches that support a safety-II analysis (see Table 1) to some extent. This was often unconscious and incidental, so was not actively used to understand positive adaptations or enabling factors.

Table 1: Use of methods that support a safety-II approach (from Anderson and Watt 2020)

Methodology	No using this approach (n=11)
Describing work as normally done	10
Observing normal work	7
Speaking with a range of frontline staff	11
Building a comprehensive picture of how work systems function	4
Identifying misalignments between demand and capacity	8
Identifying and understanding successful adaptations	8
Identifying conditions that support adaptations	3
Discussing appropriateness of adaptations	4

Investigators believed that safety-II approaches could improve system learning, decision-making and action plans for future safety. They provided many ideas for better investigations, including education for skills, supportive culture and leadership. All healthcare participants recognised the emotional impact of investigations and that a safety-II approach could be kinder and more psychologically safe for all involved.

Recommendations

Investigators recognised the benefits of a safety-II approach. More research into current practice and raising awareness of safety-II principles and methodologies would be valuable and welcomed. Many of the enablers suggested are built into existing safety campaigns such as the NHS Patient Safety Strategy and PSIRF but merit explicit acknowledgement. Additionally, related initiatives to improve culture and kindness across industries could give the safety-II approach momentum, particularly in healthcare, where there is a strong drive for improved staff wellbeing.

References

Accou, B., & Carpinelli, F. (2022) Systematically investigating human and organisational factors in complex socio-technical systems by using the "SAfety FRactal ANalysis" method. Applied ergonomics 100, p. 103662

Anderson, J. E., & Watt, A. J. (2020) Using Safety-II and resilient healthcare principles to learn from Never Events. International Journal for Quality in Health Care 32.3, pp. 196–203

Hollnagel, E. (2014) Is safety a subject for science? Safety Science 67, pp. 21–24

Kelly, N., Blake, S., & Plunkett, A. (2016) Learning from excellence in healthcare: a new approach to incident reporting. Archives of Disease in Childhood 101.9, pp. 788–791

Lyng, H. B., Macrae, C., Guise, V., Haraldseid-Driftland, C., Fagerdal, B., Schibevaag, L., Alsvik, J. G., & Wiig, S. (2022) Exploring the nature of adaptive capacity for resilience in healthcare across different healthcare contexts; a metasynthesis of narratives. Applied Ergonomics 104, p. 103810

Patriarca, R., Di Gravio, G., Costantino, F., Tronci, M,. Severoni, A., Vernile, A., & Bilotta F. (2017) A paradigm shift to enhance patient safety in healthcare, a resilience engineering approach: Scoping review of available evidence. International Journal of Healthcare Technology and Management 16.3-4, pp. 319–343

Reed, J. (2006) Appreciative inquiry: Research for change. Sage publications

Verhagen, M. J., de Vos, M. S., Sujan, M. & Hamming, J.F., (2022) The problem with making Safety-II work in healthcare. BMJ Quality & Safety 31.5, pp. 402–408