

Significant event analysis: a systems approach to exploring personal impact and improving the analytical process in primary care

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Keywords. Patient safety, event analysis, personal wellbeing, systems approach

1. Introduction

Between 1-2% of primary care consultations may involve an adverse occurrence (The Health Foundation, 2011). Such incidents clearly affect the health and well-being of patients (and relatives), but there may also be profound psychological impacts on the care practitioners involved (O'Beirne et al., 2012). In terms of related organisational learning, significant event analysis (SEA) is a well-established safety investigation tool in primary care. However, evidence suggests the SEA process is poorly implemented resulting in missed opportunities for learning and improvement to enhance patient safety (Bowie et al., 2008). A range of overlapping psychological, methodological and socio-cultural issues contributes to these problems, but two main factors operate to decrease the effectiveness of the SEA process. Firstly, being involved in a significant event can be analogous to receiving a form of 'negative feedback' on performance (Sargeant et al., 2008). The emotional reaction to this may potentially impede an objective and constructive approach to SEA and the emotional well-being of practitioners may suffer ('second victim' syndrome) leading to increased stress levels and limited preparedness to highlight safety issues because of concerns about punitive action, professional embarrassment or guilt (Dekker, 2013). Secondly, there is limited knowledge amongst practitioners of taking a systems approach to understanding how and why significant events occur and a lack of a suitable guiding framework (Bowie et al., 2008). We aimed, therefore, to design, develop and test 'guiding tools' based on human factors (HF) principles to support and enhance the SEA process in primary care.

2. Methods

A mixed methods development of guiding tools (Personal Booklet - to help with emotional demands and apply a HF analysis at the individual level; Desk Pad - to guide a team-based systems analysis; and a structured written Report Format) based on participatory design principles was undertaken by a multi-professional 'expert' group. The systems approach was adapted, contextualised and simplified from previous socio-technical models (Vincent et al., 1998, Carayon et al., 2006). Testing was undertaken with Scottish primary care practitioners (e.g. dental, medical and nursing practitioners) who submitted completed SEA reports. Evaluation data were collected via questionnaire, telephone interviews and thematic analysis of submitted SEA reports. Data were analysed using basic descriptive statistical methods. Differences in pre and post intervention responses to knowledge/attitudinal statements were calculated along with 95% confident intervals.

3. Results

149/240 care practitioners tested the guiding tools and submitted completed SEA reports (62.1%) to study leads. Reported understanding by participants of how to apply the SEA process improved post-intervention ($P < 0.001$), while the majority agreed the Personal Booklet was practical (88/123, 71.5%) and relevant to dealing with related emotions (93/123, 75.6%). The Desk Pad tool helped focus the SEA on systems issues (85/123, 69.1%), while most found the Report Format clear (94/123, 76.4%) and would recommend it (88/123, 71.5%). Most SEA reports adopted a systems approach to analyses (125/149, 83.9%), care improvement (74/149, 49.7) or planned actions (42/149, 28.2%). The main significant event categories focused on disease diagnosis and management issues (79, 53%), communication (75, 50.3%) and administrative system problems (56, 37.6%). Submissions described “near miss” harm incidents (77, 51.0%), patient deaths (4, 2.6%), severe harm (3, 2.5%), moderate harm (17, 11.3%) and low harm events (31, 20.5%). The most frequently cited interacting contributory factors related to the patient’s condition, (63, 42.3%), workload and shift patterns (60, 40.3%) and written communication processes (59, 39.6%).

4. Conclusions

The pilot study provided encouraging evidence that applying HF principles to the SEA process offers care practitioners and teams a more objective and constructive means of gaining a deeper, systems-based understanding of why things go wrong. This may help to de-personalise the incident and focus attention on the ‘true’ contributory factors – that is, how the complexity of everyday people, activity and wider environment issues can interact to increase the risk of ‘error’ and avoidable harm. Understanding these core principles is vital in adopting a mature and meaningful response to related learning and action for improvement in order to minimise the risks of incident recurrence.

Acknowledgements

We are grateful to The Health Foundation for funding support.

References

- Bowie P, Pope L, Lough M. (2008) A review of the current evidence base for significant event analysis. *J Eval Clin Pract.* 14(4): 520–36.
- Carayon, P., Schoofs Hundt, A., Karsh, B.-T., Gurses, A. P., Alvarado, C. J., Smith, M., & Flatley Brennan, P. (2006) Work system design for patient safety: the SEIPS model. *Quality and Safety in Health Care* 15(suppl 1), i50–i58.
- Dekker S. (2013) *Second victim: error, guilt, trauma and resilience*. CRC Press, Boca Raton
- O’Beirne M, Sterlin P, Palacios-Derflingher L, et al. (2012) Emotional impact of patient safety incidents on family physicians and their office staff. *J Am Board Fam Med.* 25(2): 177–83.
- Sargeant J, Mann K, Sinclair D, et al. (2008) Understanding the influence of emotions and reflection upon multi-source feedback acceptance and use. *Adv Health Sci Educ.* 13(3): 275–88.

The Health Foundation (2011) Evidence scan: Levels of harm in Primary Care.
January 2011. London: Retrieved September 14, 2015

<http://www.health.org.uk/publications/levels-of-harm-in-primary-care/>

Vincent C, Taylor-Adams S, Stanhope N. (1998) Framework for analysing risk and safety in clinical medicine. *BMJ* 11;316: 1154-7.