

A structured approach for the investigation of clinical incidents in health care: application in a general practice setting

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SUMMARY

The NHS has made patient safety a national priority. A particular challenge is to ensure that lessons are learned from clinical incidents and that individuals and agencies take corrective action. A structured approach for the investigation of clinical incidents in health care is introduced, and an example of its application in a general practice setting is presented. The framework was originally developed for the investigation and analysis of incidents in hospitals, but the approach could also find application in general practice.

Keywords: *clinical incidents; patient safety; general practice.*

Introduction

THE vast majority of patient contacts within the National Health Service (NHS) occur in primary care. Although many of the presenting complaints are minor, general practitioners (GPs) also provide continuing care for patients with chronic illness and they are the first point of contact for patients with serious and life-threatening disorders.¹ Compared with the challenging socio-technical environment of anaesthetics or surgery, primary care is a low-risk setting for patients seeking and receiving care. However, the sheer volume of patients seen, the inherent difficulty of picking out the sick from the well, the range of illnesses tackled, and an unenviable position within a complex, but not always efficiently functioning, healthcare system, make it inevitable that suboptimal care can and does occur.^{2,3} Sometimes the welfare of the patient is compromised, and occasionally the patient suffers harm.⁴

The NHS has made patient safety a national priority. Healthcare organisations that respond secretively and defensively to adverse events are destined to remain unsafe^{5,6} and may cause additional suffering to patients and families.⁷ A particular challenge is to ensure that lessons are learned from clinical incidents and that actions are taken by individuals and agencies to ensure that corrective action is taken.

There are a number of methods available for the investigation and analysis of adverse incidents in health care. The Clinical Risk Unit (CRU) at University College London, in collaboration with the Association of Litigation and Risk Management (ALARM), have developed a systematic method for investigation that extends Reason's model of accident causation⁶ by including a detailed framework of factors that may influence healthcare staff in the performance of their daily work.⁸ This method has been extensively tested in hospital settings and is now being recommended by the NHS Executive for wide-

spread use.⁹ This method supports a systematic and comprehensive investigation, reduces simplistic explanations or routine assignment of blame, and leads directly to the identification of strategies for enhancing patient safety.⁸

Method

Full details of the investigative method are available on the CRU website.¹⁰ The first step is to build up an account of the events leading to the critical incident. Typically, the patient's notes are an important source of information, together with the accounts of members of staff. The investigator then moves on to consider whether there were acts or omissions by members of staff that might have contributed to the occurrence of the incident. The salient features of the clinical context are documented for each of these, and factors that might have contributed are recorded. The investigator refers to the framework of contributory causes, which draws attention to the factors operating at the level of the patient, the individual staff, the task, the team, the work environment, and then the organisational and institutional context. A distinction is drawn between factors that are likely to be specific to the incident and those that are likely to be more general. An action plan can then be drawn up, by considering changes expected to modify the factors identified.⁸

An example of the method applied in the investigation of an incident occurring in a general practice setting is illustrated in Boxes 1 to 3.

Discussion

Reason's organisational accident model, which was developed from studying error and accidents in a number of different industries, has a useful application in medicine.⁶ The model has some important features. While the inevitability of individuals making errors is recognised, it is also made explicit that performance of any kind is strongly influenced by the conditions in which people work, and that these conditions are likely to be affected by higher level decisions made elsewhere. This thinking does not excuse individuals from their responsibility of being competent and vigilant in their care of patients, but it does reinforce the need to examine the factors that contribute to the occurrence of error, and for agencies, as well as individuals, to play their part in assuring patient safety.¹¹

The framework of contributory factors that is a distinguishing

Case summary: delayed diagnosis of septic arthritis

Mrs G was a 70-year-old widow who was living alone in a ground floor Housing Association flat. Her first language was Portuguese and her English was poor. The patient had some genuine health problems, but was excitable and tended to overstate the severity of her symptoms. The patient had suffered from osteoarthritis of the knees for years. She was prescribed regular analgesia and had been treated by a physiotherapist, but without perceiving any benefit.

She had been referred for an orthopaedic opinion but would have to wait many months for an appointment. After a fall at home, an ambulance was called and the patient was taken to an accident and emergency department. She was admitted for assessment and during her hospital stay she was seen by an orthopaedic surgeon, who included her in his operating list for a knee replacement the following week. The patient developed pyrexia after the operation, but no cause was found and the patient was discharged, with instructions to complete a course of

antibiotics. A week after discharge, a neighbour called the district nurses' office because 'no-one had been'. A nurse visited, and noted that the patient's wound was moist. On a second visit the nurse told the patient to call for a doctor's visit.

The patient phoned the surgery the next evening. The doctor on call gathered from the patient that she had been having problems with pain in her knee and that the district nurse had advised her to request a doctor's visit. The doctor promised to visit the next day. He did so, and was concerned to find that the patient's knee was hot and painful, and admitted her to hospital with a provisional diagnosis of septic arthritis. A methicillin-resistant *Staphylococcus aureus* infection of the knee joint was confirmed and the patient required arthroscopic washout and long-term antibiotics. The patient's hospital discharge letter arrived on the day of her readmission.

The doctor reviewed the case, as he felt that the patient's diagnosis had been unnecessarily delayed.

*Box 1. Clinical incident.***Active problem: there was delay in recognising the seriousness of the patient's complaint (S = specific contributory factor, G = general contributory factor).**

Patient factors	The patient was not able to make her worries and concerns clear to the GP (S) The patient had an anxious temperament and had tended to overstate the severity of her symptoms in the past (S)
Individual factors	The visiting nurse assumed that the antibiotics prescribed by the hospital were for the patient's 'wound infection' (S) The GP interpreted the patient's call as a request for a 'routine review' at the request of the visiting district nurse (S)
Task factors	The patient was discharged on antibiotics without ascertaining the cause of infection (G/S). 'Routine' home visits (including requests for review by the district nursing team) are conducted after the morning surgery (G) District nurses typically communicated with the GPs by passing messages via reception (G)
Team factors	There was no call from the orthopaedic ward to indicate a need for district nurse input (S) The visiting nurse did not discuss the case in detail with nursing colleagues, nor with the doctors (S) The patient's discharge letter arrived nine days after the patient was sent home (G/S)
Work environment factors	There was no strong culture of communication between the district nursing team and the GPs (G) The visiting nurse was a staff grade nurse seconded to the team on account of staffing shortages. She was not familiar with the local doctors (G) The district nursing sister was on holiday and the deputy did not have any explicit system for staff supervision in the sister's absence (S)
Organisational management and institutional factors	Measures designed principally to optimise bed management can compromise other aspects of the hospital admission and discharge process (G) Recruitment problems in district nursing lead to teams being understaffed and to frequent relocations of individuals (G)

Box 2. Case analysis.

feature of the CRU-ALARM approach provides a guide to various error-producing conditions in healthcare settings.⁸ The framework was originally conceived and tested in an obstetric care setting, then in other hospital-based specialities. Nevertheless, the approach has been found to be valuable and, with minor modifications, the framework is applicable to the investigation and analysis of incidents in general practice. It is hoped that the approach will eventually find more widespread application in general practice.

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Changes for consideration:	What	Who	How	When
Individuals	Appraise possible learning needs of visiting community nurse	District nursing sister	Informal discussion Include needs identified in appraisal cycle	Immediate Annual cycle
Tasks	Review clinical issues around management and discharge of patients with postoperative PUO ^a	Hospital consultant/s and/or infection control officer	Review of case series Establish consensus and develop protocol Implement protocol and review	Immediate quality assurance cycle
	Review practice policy on home visits	General practice partners	Review of case series Establish consensus and develop guidance Implement and review	Immediate quality assurance cycle
Teams	Avoid delay in communicating discharge details to primary care staff	Hospital consultant/s and/or nursing directors and/or hospital management	Consider faxing discharge details to GPs Reinforce policy of telephoning community teams on discharge of elderly patients from hospital	Meeting of primary/secondary care liaison group
Work settings	Ensure that overall levels of staffing and supervisory arrangements are not compromised by absences for leave, sickness, etc.	District nursing sister and trust nurse managers.	Review and monitor arrangements for cross cover.	Immediate
	Ensure mechanisms are in place for effective communication between district nursing staff and GPs	District nursing sister, general practice partners effective communication	Group discussion Explore mechanisms for meeting Implement and review	Immediate Joint review
Organisational and institutional management	Improve incentives and support for recruitment to district nursing	Trust nurse managers, strategic health authority	Review manpower planning and recruitment activities	Ongoing
	Target hospital-primary care communication as an area for development and evaluation	National information management and technology strategy, strategic health authority, hospital management, primary care boards		

^aPUO = pyrexia of unknown origin.

Box 3. Suggested action plan.

References

1. Fry J. *General practice. The facts*. Oxford: Radcliffe Medical Press, 1993.
2. Wilson T, Pringle M, Sheikh A. Promoting patient safety in primary care. *BMJ* 2001; **323**: 583-584.
3. Wilson T, Sheikh A. Enhancing public safety in primary care. *BMJ* 2002; **324**: 584-587.
4. Rogers S. Risk management in general practice. In: Vincent C (ed). *Clinical risk management. Enhancing patient safety*. London: BMJ Books, 2001.
5. Westrum R. Social factors in safety-critical systems. In: Redmill R, Rajan J (eds). *Human factors in safety critical systems*. Oxford: Butterworth-Heinemann, 1997: 233-256.
6. Reason J. *Managing the risks of organisational accidents*. Aldershot: Ashgate, 1997.
7. Vincent C, Young M, Phillips A. Why do people sue doctors? A study of patients and relatives taking legal action. *Lancet* 1994; **343**: 1609-1613.
8. Vincent C, Adams S, Chapman J, et al. How to investigate and analyse clinical incidents: Clinical Risk Unit and Association of Litigation and Risk Management protocol. *BMJ* 2000; **320**: 777-781.
9. <http://www.doh.gov.uk/riskman.htm> [accessed 14 August 2002.] OpenDatabase.
10. <http://www.patientsafety.ucl.ac.uk> (accessed August 2002).
11. Vincent CA. Risk, safety and the dark side of quality. *BMJ* 1997; **314**: 1775-1776.