The anatomy, physiology and pathogenesis of a significant untoward incident

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Abstract

This paper provides a structured chronology of an investigation into a significant untoward incident in an elderly care ward. Using Reason's Swiss Cheese Model, which has become one of the dominant paradigms for analysing clinical and patient safety incidents; it charts the interplay of national and local policies resulting in unsafe practice.

A qualitative approach was used in this multi-dimensional investigation. This approach aimed to discover what actually happened in the specific and related incidents and the underlying causes. Thus the anatomy of the incident refers to the structure of staffing, the physiology includes the process in place at the time of the incident and the pathogenesis alludes to the development of the incident.

The findings report on the patients involved in the incident. It also explores how strategic financial directions from the Department of Health impact on staffing levels and training. These are contextualised using the concepts of the Swiss Cheese Model to assist understanding of how and why the incident occurred.

Key points emanating from a learning event are captured to aid understanding and the importance of being cognisant of the ever present risks in clinical practice. The impact of the investigation on staff and the Primary Care Trust are also presented.

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Introduction

At 5.00am one morning in November 2007, a member of staff entered a Primary Care Trust (PCT) ward for the elderly and found a patient with advanced dementia tied to a chair with a bed sheet. The folded sheet was tied around the patient and the chair with the knot behind the chair. The matter was reported to the PCT managers. As there was uncertainty surrounding the identification of the individual who tied the patient up, all four members of staff who were on duty at the time were identified and suspended. Following the procedures laid down in the Protection of Vulnerable Adults (POVA) guidelines[1], the PCT informed the police who conducted an investigation over the following three months and referred their findings to the Crown Prosecution Service who declined to mount a prosecution after reviewing the information presented to them. In February 2008, the matter was referred back to the PCT who began its own investigation into the incident and the surrounding circumstances.

This paper describes the investigation[1] and the findings; the findings are analysed using Reason's[2] Swiss Cheese Model of system accidents. The chronology of events, learning from the investigation and the impact for staff and the PCT are also highlighted.

Methods

The multi-dimensional investigation comprised interviews, review of ward documentation including patients' records, oral and written information, site visits and information from the police investigation. This approach aimed to discover what actually happened in the specific

[1] It should be noted that major national television and radio stations reported the incident when it occurred; further reports were published in local newspapers.

incident described, any related incidents and the underlying causes. Thus the anatomy of the incident refers to the structure of staffing, the physiology includes the process in place at the time of the incident and the pathogenesis alludes to the development of the incident. Box 1 summarises the timeline.

Structured interviews of staff were mostly tape recorded (with consent from interviewees) and undertaken with 33 employees. Contemporaneous notes were made and the transcripts were made available to the interviewees. Interviews of patients and relatives were conducted by PCT staff trained in sensitive interviewing techniques and who were not front line clinicians. The investigator re-interviewed some staff to clarify issues identified in the transcripts.

Documentation was used to identify issues and triangulate findings with other information obtained. Guidelines on good practice concerning the protection of vulnerable adults and the use of restraint[1,3,4,5,6] were used as references in the investigation. Restraint is defined in the Mental Capacity Act 2005[7] as action that uses, or threatens to use, force to secure the doing of an act which the client resists, or restricts the client's liberty of movement, whether or not the client resists.

The project group consisted of the investigating team: managers, directors, the Chairman of the PCT, a representative from the Hospital Trust and an outside expert, who met frequently throughout the investigation and beyond. It directed the investigation, made decisions about staff suspensions and ensured sensitive release of information to patients, relatives and staff.

Following a report compilation and disciplinary proceedings taken against staff, a Learning Event was held by the PCT and included all stakeholders: representatives of the Healthcare Commission, a Union Representative, Non-Executive Directors of the PCT, police and the POVA Strategy Group. The event was conducted under Chatham House Rule[8] and consisted of a presentation, outlining the incident, investigation and predisposing factors. Small groups discussed what had gone well and what might be improved in relation to the investigation, staff management and relationships with colleagues. The aim of the exercise was to capture lessons from the incident and to disseminate good practice.

Findings

The first patient

Patient C was an elderly patient with advanced dementia who was found by a member of staff tied to a chair. The four staff members on the night shift denied tying Patient C to the chair or that the patient was tied to a chair. They further maintained that a sheet was placed around Patient C for warmth as there were no blankets available.

Other patients

The investigation identified a further four patients who were treated similarly, two of whom were deceased. They shared a history of confusion and disruptive behaviour. Multidisciplinary team discussions about one of these patients had concluded that, for a test period of two weeks, the patient should be allowed to sit in a chair with a loosely-held restraining seat belt, after which this would be reviewed by the Consultant at regular intervals. Staff interviewed had observed this restraint, but apart from the ward manager, none had recognised that this was part of a specific and agreed strategy that was under regular review as there was not a care plan concerning restraint in the records.

Relatives of the two deceased patients reported that their relatives had told them that they were tied to their beds. One relative witnessed the restraint of their family member whilst other relatives observed patients being restrained by tying to furniture. The case notes of one patient recorded that a patient's relative had asked that the patient be restrained in a chair but a nurse refused to do so on the grounds that it was unethical. The investigations established that the effect of inappropriate restraint on the patients could not be demonstrably ascertained because of the cognitive impairment of the patients. Nonetheless, the possible effects of such behaviour, including ethical issues and the impact this behaviour may have on the patients themselves, relatives and friends were of concern to the investigating team.

Staff denial

Some members of staff confirmed that these patients were restrained with either bed sheets or men's braces while others deny witnessing, or knowing of, patients who had been restrained. Those nurses who had witnessed restraint of patients did not report the practice. One health care assistant thought that restricting movement by tightly applying a sheet and placing a table close to the patient was acceptable practice.

Analysis

The analysis presents the predisposing factors of the incident and their fit with the Swiss Cheese model[2] (Figure 1). Box 2 highlights main points of the learning event.

The basic premise of the Swiss Cheese model implies that hazards or errors are prevented from occurring by a series of barriers and safeguards. In an ideal organisation the safeguards and barriers would be intact. However, Reason[9] postulates that most organisations are akin to slices of a Swiss cheese with many holes. Unlike a Swiss cheese, these holes continually shift their position, opening and closing in different areas. The existence of holes in a 'slice' does not normally result in an accident. Accidents occur when, by chance, the holes in many 'slices' align to allow a route for the hazard to reach the patient, causing harm.

Each barrier has unintended weaknesses or holes (Figure1). Holes in the defence occur because of two reasons: active failures and latent conditions. Active failures refer to unsafe acts committed by individuals at the 'sharp end' of the system (pilots, air traffic controllers, maintenance workers, doctors, nurses) whose actions can result in immediate adverse consequences. Latent conditions are strategic misjudgements or poor decisions usually taken at senior management level of the organisation or within society, away from the front line and who are said to be at the 'blunt end' of the system. Latent conditions have a further three layers: organisational influences, unsafe supervision and preconditions for unsafe acts. The following sections contextualise these concepts within the current investigation.

Latent conditions

(i) Organisational influences

The latent conditions identified in this investigation include strategic direction from the Department of Health for Trusts to achieve financial balance or breakeven[10] in the financial year. Against a background to achieve financial balance this affected staffing levels and training issues. The PCT in this investigation had significant financial problems and was required to produce a robust recovery plan to achieve financial balance over the shortest possible period.

Recovery Plan

The Trust Board approved the Recovery Plan at its meeting in June 2006 when it was described as being "non-negotiable". It was subsequently approved by the Strategic Health

Authority. The Plan resulted in a sudden cut of more than 20% in the nursing budgets for the Care of the Elderly Wards. Notes made by a PCT staff in May 2006, suggested that no risk assessment had been made of its action. The Recovery Plan had small sections on risk and its mitigation; this had been evaluated by three PCT directors alone. The PCT's Risk Register does not contain information to suggest that the risk to patient safety was monitored following the implementation of the Recovery Plan. Enquiries by the investigator to appropriate personnel in the PCT did not uncover any information to suggest that any such evaluation had occurred. Consequently strategic decisions such as the reduction in nursing budgets, the lack of identification of risk management and the lack of wider discussions about risks and its evaluation are latent failures and predisposing factors which impacted on the patients and staff 15 months later.

A Health Impact Assessment day was held in June 2006, after the Recovery Plan had been signed off, which involved 19 people including practicing clinicians. The issue of not filling vacant posts was judged by far to be the greatest risk of the whole Recovery Plan. The risk was to be managed by a service redesign and one of the four Care of the Elderly wards that were managed by the PCT was closed.

Between June 2006 and November 2007 all five Executive Directors moved on from the PCT. The investigator judged that the 'organisational memory' was affected by this, including monitoring the consequences of the Recover Plan.

(ii) Unsafe supervision

Staffing levels

The staffing levels for the 26-bed ward at the time of the incident were meant to be two trained nurses and four Health Care Assistants during the day and evening shifts, and two trained nurses and two Health Care Assistants on the night shift. The investigator was told that there are no national guidelines as to staffing levels on Care of the Elderly Wards, but local comparisons suggest that this complement of staffing was low. Differing opinions exist as to how often the ward was understaffed. It is undisputed that there was heavy reliance on

‘bank’ staff[2] to cover periods when there was staff shortage and when patients required 1 to1 care – as in the case of the first patient.

Reason’s[2] model takes into account predisposing factors which might lead to an incident. In this case, the reliance on bank staff is viewed as being both latent and active predisposing factor. The latent failure has been discussed above in relation to financial instability. However, some responsibility for active failure rests with the individual because of the need for their physical and emotional stamina to work long hours. Errors in their delivery of care are more likely to occur; it is at such times that shortcuts might well take place [2]. The data showed that some staff drew the attention of senior managers to the high use of bank staff and poor staffing levels. In terms of the model, the individuals to whom the staff had voiced their concerns inadvertently allowed unsafe supervision of both staff and patients, thus giving the impression of condoning poor staffing levels.

(iii)Precondition for unsafe acts

Training

The data showed that only two staff had received training on restraint or protection of vulnerable adults. Of the two, one staff received training in a previous employment and the other undertook training in her own time. Interviews with some staff showed that lack of training was a predisposing factor to their substandard practice as some had poor understanding and knowledge of what constituted restraint.

Active failures

Unsafe acts

An interview with a member of staff highlighted that reduced staffing levels resulted in sub-optimal quality of care for patients. Examples given were lack of attention to dietary, continence and mobility needs. Poor team communication was highlighted by staff although they were encouraged to discuss issues at monthly meetings. Minutes of meetings were held on computer but could not be accessed by the investigator because of suspension of staff.

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[2] Bank staff were nurses engaged by the PCT to work shifts on an as-needed basis. Bank staff may have held substantive contracts of employment with the PCT, or may have been engaged only under the terms of a bank staff letter of registration.

Staff appraisals had been undertaken although not all within a 12 month period. Some were judged to be superficial by the investigator; only one interviewee identified any learning or professional development plan that emerged from the appraisal. Lack of support for training was also an issue of concern for some staff.

Discussion

The Swiss Cheese model demonstrates that the events outlined in this paper do not occur in isolation but as a result of certain pre conditions being breached. Some of the issues to emerge from this investigation include non-technical skills, for example, social or interactive skills and situation awareness skills. These skills relate to the individual *per se* and are required in team and individual situations. They should be part of an induction programme so that the concept of patient safety, respect, dignity and management are grounded in practice.

Managerial procedures for recruiting staff were curtailed because of the financial position of the PCT which in turn was responding to government policy. These latent conditions and predisposing factors lay dormant for many months before impacting with other failures to produce unacceptable nursing care. Analysis of error in any complex organisation requires investigation into both active failures that happen to the individual at the front line and the latent failures of policy, procedures and culture. Reason's[2] Swiss cheese model allows organisations to find holes in their defences and to develop mechanisms to address the underlying structural weaknesses.

The PCT's written procedures view suspension to be a neutral act. However, this was not perceived as such by the staff. Suspension together with the involvement of the police in the investigation was not conducive to a climate of openness. This made investigation into the circumstances of the first patient and the surrounding issues difficult. In particular, although there is clear evidence of patients being restrained, no member of staff admitted to doing this or knew anyone who had done this. In the event, the investigation resulted in disciplinary procedures being applied to four members of staff and a further member was reported to their professional body.

The team interviewing the patients and their relatives found that the majority said they were satisfied with the care received on the ward. Some patients and relatives were highly complimentary about the services provided. However, there were some who said they were not satisfied with the care delivered but would not complain because their relative could be re-admitted onto the ward. This mixture of reviews would suggest that the quality of care on the ward was variable. Further, little consideration appears to have been given to the impact of such actions as restraint on people with dementia themselves. There appears to be an underlying issue among staff and management that behavioural disturbances in people with dementia are indicators on unmet needs and would indicate a failure to address provision of training in best practice in dementia care. If staff have not been trained well in communicating with people with dementia, they are unable to respond appropriately to their needs and staff are unable to understand what needs the person with dementia is communicating through behavioural symptoms. This makes poor practice not only likely, but inevitable. Poor practice will perpetuate itself.

A pertinent issue for nurses (and other health care professionals) to bear in mind is that their practice decisions have an ethical component. The component is made up of a number of principles and includes: avoiding harm, assessing the consequences of action, autonomy and rights and values and beliefs[1]. Tension arise in the decision about applying restraint because to do otherwise could also cause harm. Thus the consequences of using or withholding restraint need to be carefully considered by determining the potential benefit and harm. Two of the principles laid down by the Mental Capacity Act 2005[7] states that:

> An act done or decision made, under this Act for or on behalf of a person who lacks capacity must be done, or made, in their best interests.
>
> Before the act is done, or the decision is made, regard must be had to whether the purpose for which it is needed can be as effectively achieved in a way that is less restrictive of the person's rights and freedom of action.

The investigation team found that the actions of some of the nurses breached these values when treating elderly patients with dementia. Implicit in this behaviour is the lack of person-centred care, a lack of understanding about the impact of dementia on patients and a lack of skills in effective communication by staff when working with people with dementia.

Incidents such as those described in this paper do not occur in isolation of context in which practitioners work, including the culture and climate of the organisation. Recent thinking suggests they occur due to a combination of issues in individuals and systems[2]. Thus the allegations were investigated in the context of their wider settings. There is little controversy among clinicians about the importance of good clinical practice, but the consensus of good clinical practice dissipates when errors occur, making investigation of incidents difficult. It is imperative to know, understand and learn from the ever-present risks in clinical practice.

Summary

There is very clear evidence that the first patient was tied to a chair with a sheet in November 2007 and possibly on previous nights and this was performed in a way contrary to National Guidelines on restraint[1]. There is no evidence that points to which particular individual or individuals were responsible for participating in restraining patients. There is evidence that some staff knew about this unacceptable practice but failed to manage or report this behaviour. Knowledge of policy and practice of restraint was poor: some senior staff did not recognise that the use of a seat belt was restraint. This was partly due to the lack of training on this subject, but also about the condition of dementia, its impact and the communication skills of staff. There are lessons that were learnt concerning the latent conditions that predisposed to the incident, such as sensitivity of the needs of patients and their relatives throughout the investigation, apologies were given and feedback was given to them before the official report; interviewers were specially trained and the timely response to the incident. The events described in this paper are both of national and international significance. Extensive recommendations (http://www.harrowpct.nhs.uk) were provided for different groups identified in the investigation: individual nurses, ward staff, medical consultants and the Trust.

Box 1 Summary of timeline

November 2007 Formal report of incident Staff suspensions Significant Untoward Incident (SUI) reported to NHS London Referral to police Referral to Protection Of Vulnerable Adults (POVA) strategy group February 2008 Police conclude criminal investigation (No further action) Medical Director (MD) appointed to carry out investigation MD hears evidence to suggest multiple abuse Chief Executive establishes Project team March 2008 Action Plan devised and regularly updated March/June 2008 Regular meetings of the Project Team to review evidence/ plan next steps Support provided for patients and staff Consultation/discussion with key stakeholders Progress reports and attendance at POVA strategy group meetings First draft report circulated August/September 2008 Final SUI report and Executive Summary produced Learning event.

The Swiss Cheese Model: anatomy of error

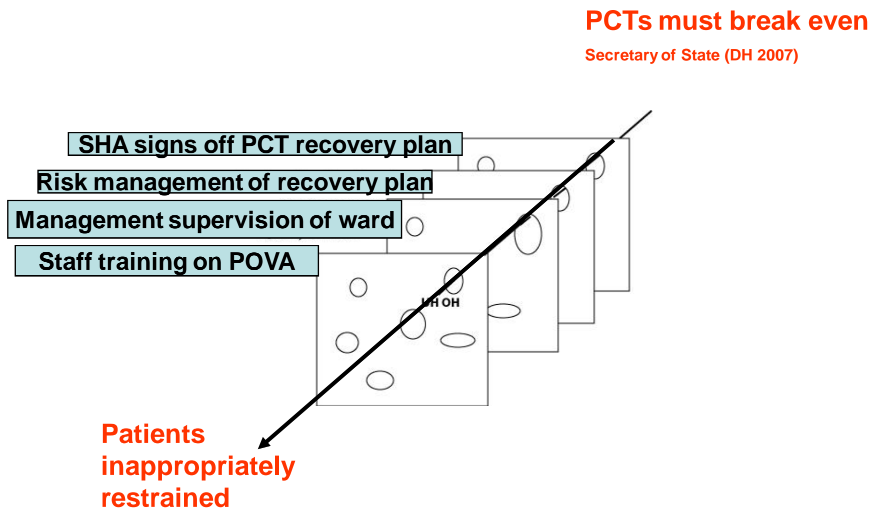

Figure 1 Swiss Cheese Model (Reason 1990).

Box 2 Key points arising from the learning event

What went well	What could have been improved
The immediate response to the index incident in November 2007; the communication at the time of the incident when patients and the family of the index patient were informed of what had happened. An SUI was called in line with policy. The police were called to investigate whether a criminal action had taken place to determine whether any prosecution should take place. Information was passed to all the stakeholders. The local Protection of Vulnerable Adult (POVA) strategy group which met and approved the strategy adopted by the PCT after it was clear that there were several patients involved. This enabled communication with the stakeholders and provided a conduit to track information There was sensitivity to the needs of patients and their relatives throughout the investigation, apologies were given and feedback was given to them before the official report was issued. The introduction of a helpline for patients and their relatives. The interviewers interviewed the patients and their relatives after having been trained. The investigation was focussed on the incident itself and the predisposing factors.	Some of the issues that the investigation had highlighted were discussed and it was judged that they should be emphasised. This included: • the need to prioritise patient safety • the lack of identified patient safety issues being recorded on the risk register • lack of education and training of the staff • the isolation of the night staff. It was believed that unannounced visits from senior staff in the evening and at night can be well received and revealing • the overuse of bank staff • fatigue of staff who frequently did double shifts • culture of blame perceived by the staff although a criminal investigation severely limits the ability to be open. There was a time delay before it was determined that the restraint of more than one patient had occurred. This was because of the priority given to the criminal investigation. It was thought that as in child abuse cases, a criminal and SUI investigation could be carried out simultaneously. There were issues about storing information when it was received which should have been recognised at the outset and provision for and a clear filing strategy developed and implemented. There was sometimes delay when there was a need for legal advice at particular points. Although communication was good with the solicitors they were not in a position to provide instant answers

	without notification.
Impact of investigation	
Staff	POVA training and regular update are part of personal development for relevant staff The PCT's disciplinary procedures were applied to four members of staff One member of staff was referred to their professional body
The PCT	The thorough investigation by the PCT did not result in judicial prosecution The PCT reviewed and amended its governance arrangements Improved use of the Risk Register and reporting arrangements have been put in place.

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Word count: 3,895 including reference list and contents of boxes.