

Tackling human and organisational factors: the human contribution

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The NHS for many years has concentrated on a system focused solution to errors, while attempting to avoid an individual “blame culture.” Although this focus has been positive in achieving a more robust understanding of incidents, errors, and their management, the drive for searching out “system failures” has perhaps been at the expense of identifying the accompanying “human factors.”

The process of organisational safety management is one of observation and response. Traditionally, it was reactive in nature, being triggered by serious incidents; usually where injury or death occurred. These incidents were investigated, causes were identified, and changes made. No further action would be taken until the next incident occurred. This approach is effective at reducing disasters caused by failure of equipment or procedures which, once identified, did not commonly crop up in subsequent

investigations. It did not, however, work well for human causes. A string of investigations in health care over the past decades have revealed the same basic human factors of culture, values, and behaviour occurring repeatedly, most recently in the failures at Mid-Staffordshire NHS Foundation Trust.¹

In industries with a long history of safety management, the alternative “proactive” approach has led to better safety records in organisations that have adopted it. Proactive safety management deploys safety resources permanently so that safety related information is continually collected and analysed, issues related to safety are addressed as they are found, and staff education is implemented on a continuous rolling basis.

Our move into a new era of the NHS brings an opportunity to refocus how we educate, train, and deploy the workforce. It is the responsibility of this workforce as a whole to achieve improved outcomes for patients (which most importantly are safe, effective care and a positive experience).

Models

One reason that reactive safety management performs poorly is that disasters are rare, giving it low statistical sensitivity. This problem is overcome by models such as Reason’s “Swiss cheese” and the University of Texas “Threat and error management” (figure 1).^{2,3} In these models, adverse events occur when multiple causative factors coincide. Individually, these factors are more common than the adverse events themselves and they give the necessary statistical power to guide action and measure its effects. Causative factors are used as surrogate endpoints in the process aimed at reducing adverse events. Of these factors, it is “latent conditions” that an organisation has the most direct control over, and this makes them the easiest and quickest element to change.

Latent conditions are background procedural and structural issues that leave an organisation vulnerable to failures, but do not themselves cause disasters without the additional input of circumstances and human error. Latent conditions abound, such as inefficient IT systems, work scheduling with insufficient

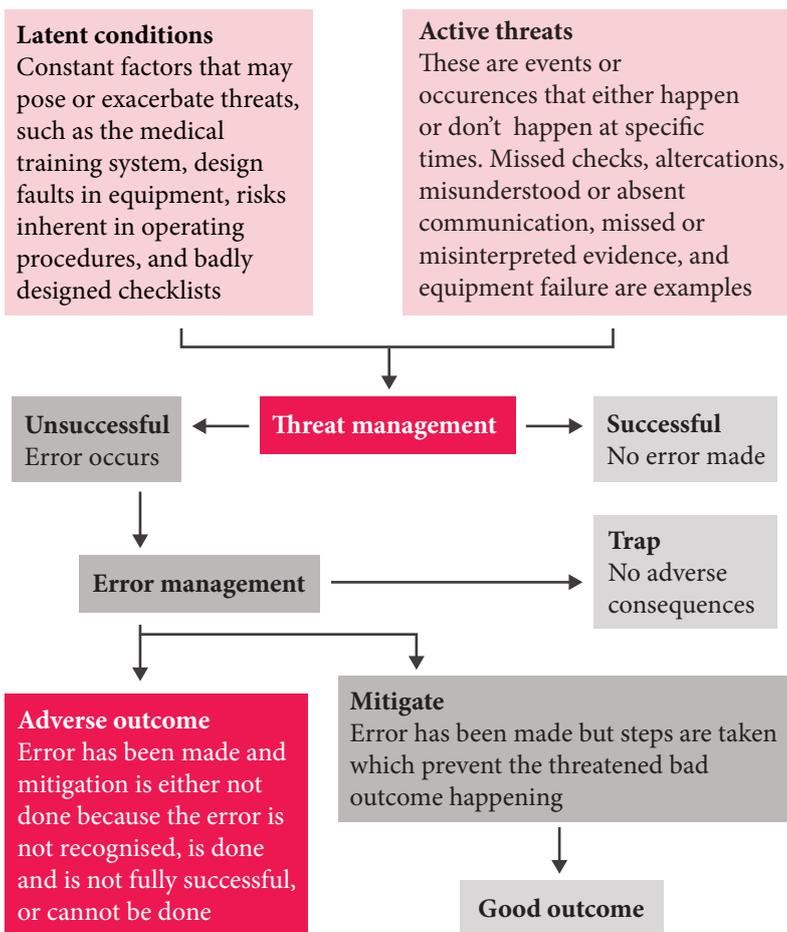


Figure 1 The causative factors of adverse events are divided into latent factors, threats, and errors. Safe organisations get to green more often via shorter routes than less safe organisations.

time to hand over or hold a briefing, unreliable equipment, and risk prone prescribing systems. Latent conditions, threats, and errors are the nucleus of proactive safety management. They are the factors that should be continuously monitored and managed.

Key roles of staff

The key to organisational safety is universal involvement. The optimal role of safety specialists is to promote a safe culture by educating, supporting, and facilitating the whole workforce in the pursuit of safety rather than to work primarily with management and occasionally engage with the wider workforce, and this differs from other areas of management. As such, the most important quality of these staff members is their ability to engage with colleagues ahead of a specific interest in safety.

Health care involves professionals, patients, and the public, who all have key roles in reporting safety information and taking action. One of the leading innovators in UK healthcare safety is Martin Bromiley, an airline pilot whose wife Elaine died in 2005 as a consequence of anaesthesia for a minor ENT operation. With his insights from the safety conscious airline industry, he insisted on an investigation into Elaine's death. From this investigation he recognised human limitations among the causes, which is a well known factor in the aviation industry but apparently not in health care. He consequently embarked on a campaign to improve patient safety.⁴

The NHS research effort (led by the National Institute for Health Research) placed a high priority on patient and public involvement (PPI), not only in the conduct of research but also in the identification of priorities and the design of projects. Though not current practice, the PPI concept has as much potential in safety as it does in research.

The most effective test healthcare providers can perform when they are caring for patients and their families is to put themselves and their own family in the patient's position. Understanding ourselves as individuals is important in order to be able to truly "connect" with each patient as an individual, and to understand ourselves

is a journey that is enabled by training and education, but not delivered by it.

Perhaps the step before this is a true understanding and acceptance by organisational leaders that it is the focus of people and their non-technical competence, as well as their technical competence, which will improve the safety of the care they deliver. If the NHS follows the path of the aviation industry, the assessment of that non-technical competence will become part of an annual review of doctors and also part of revalidation.

Organisational resilience

Resilience refers to an organisation's ability to prevent, contain, and recover from adverse events. Outside of health care, the focus is primarily on natural disasters, accidents, acts of terrorism or war, and economics. Within health care, resilience is primarily concerned with patient safety.

Most patient safety disasters do not have their origin in committees or boardrooms but in the minutiae of day to day practice on the front line of healthcare delivery. Organisational leaders are at a disadvantage in matters of safety because of their remoteness from frontline operations and because many have limited or no direct clinical experience. In recent high profile cases of poor organisational resilience such as at Bristol and Stafford, frontline staff had identified the problems far enough in advance to avert the consequences that ensued, but the organisational leaders were not aware either of the problems or of their implications, and so failed to act effectively.

Organisational leaders need navigational aids to guide safety related policy.⁵ Reactive navigational aids inform responses to problems that have arisen, while proactive navigational aids inform a steady background improvement in safety. Good proactive organisational navigation reduces the need for reactive aids, but as in other areas involving human factors, achieving perfection is unrealistic and reactive aids will therefore always be needed. The goal of proactive aids is to reduce the need for reactive aids.

Proactive navigational aids are the means by which leaders become aware of safety issues

Problem	Fast imprecise response	Slow precise response
Underperforming clinician	Suspension pending investigation	Practice supervision and retraining
A surgery unit has an unusually high death rate	Stop all surgery	Bring in reputed clinical specialists from outside to work with the unit, report on problems, and recommend changes

Table 1 Examples of reactions to problems'

in an organisation's front line. Traditionally, issues were raised by healthcare staff and passed through middle ranking administrative staff up the command line, and ultimately a solution was passed from the top down. For safety related issues, this system functions badly. Personal blame and retribution are serious impediments to organisational resilience as safety related information often has perceived blame associations, even though errors are down to human limitations and not malice. Combining the roles of safety monitoring, authority, and discipline in the same people suppresses such information. It is far better to use a separate safety system staffed by people skilled at separating issues from blame.

Reactive navigational aids guide an organisation's response to problems that have occurred. While they use the same method of information gathering and inform the same change implementation systems as proactive aids, they are characterised by a particular balance: time verses precision.

For an organisation reacting to a problem, there is always a trade off between the speed and precision of actions. Faster actions are less precise and slower actions are more precise. Often a fast imprecise action is followed by a slow precise one. Table 1 above has some examples.

The early imprecise response may be necessary, but is often equally as damaging to the organisation as the problem itself, as was demonstrated when the paediatric heart surgery unit in Leeds was temporarily closed pending clarification of data suggesting a high mortality rate.⁶

The speed verses precision balance is always there, but a more resilient organisation will respond with the same precision in the same time or quicker than a less resilient organisation. Often this will mean that a

precise response can be mounted instead of an imprecise one, avoiding the damage imprecision causes altogether.

Key strategies to create and support high reliability in healthcare organisations

The strategies recommended to create and support high reliability are not different to those described above; however, the mindset behind these may need to be.

Systems require permanent full time safety staff who are not associated with authority and discipline. They will need to support the required culture, provide transparency, and supervise proactive data gathering on latent conditions and treats. They can be used for reactive data gathering and to identify where change may be necessary, as well as for providing valuable rewards where improvements have been identified.

Information gathering is impeded by the time it takes to report issues and also the common belief that reporting is futile because nothing will change. As a result, healthcare organisations' incident reporting systems are commonly underused.

Leadership does not naturally translate to management. Safety systems require natural rather than appointed leaders, and these can be found at every level of an organisation. The organisational leadership, such as the board and senior managers, need to identify and empower these natural leaders within their organisations to optimise safety.

Culture – "Leaders get the culture they create." The behaviour displayed by a workforce is generally reflective of the leaders of it. Recognition and support for a workforce to develop its non-technical as well as its technical

competence will begin to allow an enablement to move towards a safety culture. Unlike other managerial issues such as finance, policy, and scheduling, optimal safety strategies must involve people working directly with the risks, and this means frontline staff, patients, and the public. The optimal role of safety specific staff is not to determine safety policy themselves, but rather to facilitate the development of safety policies by these groups. This involvement means both reporting and responding to safety related issues: latent conditions, threats, and errors. In general, the people who are best placed to deal with threats and errors are those who they directly affect; for example, the solution to a safety problem that affects junior doctors is best derived by junior doctors, and the solution to a safety problem that affects ward nursing staff is best derived by the ward nursing staff rather than the matron.

Action – The key to effective action is to involve the people on the front line in both its planning and implementation. When issues are identified, staff members immediately involved may be asked to propose solutions with a minimum of input from their line management. In cases where this is not possible they should still be actively involved, not only in the implementation but also in the design of measures. The advantages of this system are: firstly, as frontline staff have the greatest knowledge of the issues involved, they are liable to make more sensible recommendations than anyone not directly involved; secondly, it shows staff members that the reporting system leads to sensible action and so encourages them to use it; thirdly, it removes the problem of direct involvement of figures of authority (who tend to inhibit a frank discussion involving issues that may be seen to imply blame).

Training for safety is focused on human factors and non-technical skills. Universal involvement in safety policy means placing significant influence in the hands of people who, by default, have no specific training in this area. For this reason, the education of all staff is a necessary rejoinder. As with universal involvement, education must also be universal.

Conclusions

Safe healthcare organisations have permanent full time systems for proactive collecting of

information about latent conditions, threats, and errors. These same systems also allow fast and accurate reactive collection of information after adverse events. They involve frontline staff, patients, and the public in the collection of information, as well as in the planning and implementation of action. This enables them to minimise adverse events and to act with greater speed and precision during those events that do occur, and so minimising their negative consequences.

This is neither new nor easy. If culture change and organisational resilience were easy to implement, we would have done so long before now.

References

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