An introduction to Safety Climate

1. Background

The patient safety problem

Patient safety has become a high priority in most modern health care systems, including the National Health Service (NHS). A significant minority of patients is unintentionally harmed as a result of their interaction with the service. Evidence suggests that around 10% of NHS hospital in-patients may suffer an adverse event, with many incidents thought to be preventable. Research on error and harm prevalence in primary care is limited but suggests a prescribing error rate of 7.5%, an error rate of up to 76 per 1000 consultations and that 5% of hospital admissions may be due to preventable adverse drug events. A recent pilot study reviewing a random selection of primary care electronic medical records found a harm rate of 9.5%.

Improving patient safety

A positive and strong safety culture is essential to improve and assure patient safety. Building a safety culture is therefore strongly promoted as an important activity for all NHS organisations. It is arguably even more desirable for UK primary care as the majority of health care is delivered in this setting.

Health care teams with a positive safety culture are more likely to learn openly and effectively from error and harm. The converse is true for a negative safety culture, which has been implicated as a causal factor in many major organisational failures worldwide, including high profile NHS incidents. The prevailing safety culture also influences the priorities of every health care worker and help to shape their discretionary safety-critical attitudes and behaviours.

2. Safety culture and safety climate

Safety culture

Safety culture is commonly defined as ‘...the product of individual and group values, attitudes, perceptions and patterns of behaviour that determine a team or organisation's commitment to safety management.’ Another well-known and practical definition is ‘the way things are done around here.’ It is widely accepted that every organization and team has a culture. Culture can be likened to yeast – it permeates all parts of an organisation just as yeast is kneaded into all parts of the dough. Although 'invisible', the culture and yeast exert influence from within. Its impact can be observed as behaviour and as bread.
Safety climate

The term ‘safety climate’ refers to the measurable components of safety culture. Safety climate provides a ‘snapshot’ of culture at a given moment in time. The terms ‘culture’ and ‘climate’ are often used interchangeably.

Safety climate factors (dimensions)

Safety climate is thought to consist of a number of factors (also called dimensions). Examples of factors include:

- Leadership
- Communication
- Workload
- Teamwork
- Safety Systems

3. Measuring safety climate

For safety climate to be assessed and improved it must first be measured. High risk industries such as aviation, the nuclear energy and petro-chemical sectors have been measuring safety climate for many years. In health care, safety climate measurement is well established in secondary care settings in the United States, while there is progress in some acute hospitals in the UK.

Safety climate questionnaire surveys

Safety climate assessment typically requires the workforce to complete self-report questionnaires anonymously on a periodic basis. The individual scores are aggregated to provide a ‘snapshot’ of the overall safety climate and of those factors known to be important aspects of safety climate in the workplace (e.g. perceived effectiveness of team-working, leadership or communication systems).

Appropriate assessment instruments have been developed for healthcare and non-healthcare settings, although the psychometric properties (reliability and validity) of many have been subject to criticism. Their transferability to different geographical and clinical settings has also been questioned.

The hierarchical and organisational nature of the NHS potentially allows safety climate to be examined, compared, monitored and improved at different levels, for example work groups (e.g. the nursing profession or administrative staff) and organisations (e.g. individual general practices, Community Health Partnerships or NHS Boards).
Requirements for successful measurement

- The support of all members of the practice team should be obtained before the survey.
- An appropriate questionnaire should be selected (see criteria below).
- Data should be collected anonymously.
- The results should be disseminated to all participants.
- The results should be used to plan and to implement improvement initiatives.

Criteria to select an appropriate questionnaire

An organisation or team should attempt to choose a questionnaire that meets all (or most) of the following criteria:

- The questionnaire should measure the core safety climate factors that are relevant to that organization or team.
- The questionnaire should have been developed for (and preferably by) the staff groups that will be completing it.
- It should have been developed specifically for that type of organization and for a specific geographical setting.
- It should be feasible.
- It should have sound psychometric properties (reliability and validity).

The three core factors in any healthcare or non-healthcare setting are: ‘Leadership’, ‘Communication’ and ‘Safety systems’. Research by NES has found two additional factors specific to primary care: ‘Workload’ and ‘Teamwork’.

SafeQuest

SafeQuest is a 30-item, validated questionnaire specifically designed for use by all primary care team members in a UK setting. It measures perceptions of safety climate and five safety climate factors: Leadership, Teamwork, Communication, Workload and Safety Systems. A major benefit is that it is also suitable for non-clinical and non-management staff groups who are often excluded from other safety climate studies.

Survey limitations

Any safety climate survey provides only a simplified, superficial and partial description of the actual safety conditions within teams and practices at a given time. Capturing the complexity and deeper, underlying aspects of safety culture may be difficult for a number of reasons, including:

- The quality (positive or negative) rather than the strength of perceptions are measured.
- The perceptions and attitudes of respondents may be influenced by unaccounted for educational, socio-economic and personal factors at the time of participating.
- A number of respondents in any culture survey are known to be unconscious of their surrounding culture or to express an exaggerated attitude when prompted.
- Many respondents understandably lack awareness, experience and understanding of the concept ‘safety culture’.
4. **Benefits of safety climate measurement**

Measuring safety climate has various potential benefits which can be described at different levels and/or settings.\(^{13,18,29}\)

**Individual team members**

At the level of the individual team member safety climate surveys may increase awareness of safety and safety-related conditions and behaviours.

**Practice teams**

At the practice team level safety climate surveys may have application as a diagnostic and educational tool:
- Allowing primary care teams to measure their safety climate,
- Identify their relative strengths and weaknesses by comparison to the regional aggregate,
- Prioritize, design and implement initiatives to build a stronger safety culture
- Evaluate their progress through periodic surveys.

**Organisational level**

At the regional and NHS management level the perceptions of safety climate and related factors of different healthcare organisations and teams can be monitored, compared and influenced over time.

**Secondary care**

Emerging evidence from secondary care suggests that safety culture is associated with clinical and health care worker outcomes.\(^{22,29,35,36}\) Studies have shown:
- Significant reductions in reported medication errors,
- Fewer patient falls
- Lower infection rates
- Decreased staff turnover
- Increased adoption of safe work practices
- Increased job satisfaction.

Research is currently being undertaken to examine whether a similar association between culture and outcomes exist in primary care.\(^{23,32}\)

5. **Safety climate research findings**

**Differences in perceptions**

A consistent and main finding of the vast majority of safety culture surveys - irrespective of industry or setting – is that respondents grouped as ‘management’ because of seniority and/or management roles perceive the safety climate significantly more positive than those in the ‘non-management’ group.\(^{12,27,29,35}\)
While it may be tempting to speculate or attempt to determine which group’s perception is closer to reality it is the degree of variation between the groups that is more important. Determining which group’s perceptions are closer to reality can be very difficult and indeed unhelpful in practice. Differences in perceptions have serious implications as the number of safety-related incidents increases with the degree of variation in perception between different staff groups.  

In general medical practice, doctors have a multi-faceted organisational role as leaders, managers, educators and front-line clinicians. Arguably, this should provide them with sharper insights into the safety of patient care and related practice systems than other staff groups. However, a recent study has found significant differences between ‘management’ and ‘non-management’ in general medical practices in the West of Scotland. For a positive and strong safety culture to be built perceptions of all primary care staff groups may therefore first have to be aligned.

6. References

(2) Council of Europe. Recommendation of the Committee of Ministers to member states on management of patient safety and prevention of adverse events in health care. 2006.


