# **Tools For Measuring Patient Safety Culture In Hospitals**

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### ABSTRACT

Patient safety culture is described as employees' shared values, attitudes, and behaviors in a healthcare organization. With increasing awareness of Organisational safety culture, hospitals continually strive to improve patient safety and quality. It entails the requirement of assessment tools focused on the cultural aspects of patient safety improvement efforts. The assessment of patient safety culture in the healthcare environment is mainly carried out through surveys or self-assessment tools, formed to perceive the attitude of healthcare professionals in hospitals. This review highlights different assessment tools available with their current and potential uses. Several assessment tools have been developed over the past, but awareness of the characteristics of different tools helps to select the appropriate tool suited for the organization under their circumstances. The appropriate tool depends upon the reliability of the tool for its culture, target population etc and there is a variety of tools being utilized for measuring Patient Safety Culture:

- a) Team Dimensions Rating Form (TDRF)
- b) Safety Attitude Questionnaire (SAQ)
- c) Oxford Non-Technical Skills Measure (NOTECHS)
- d) Observational Clinical Human Reliability Assessment (QCHRA)
- e) Non-Operative Procedure Errors (NOPE)
- f) Perceived Collaboration & Satisfaction About Care Decisions (CSACD)
- g) Anaesthetists Non-Technical Skills (ANTS) System
- And their overall aim and main goal is to improve patient safety and elevate quality care.

#### Introduction

Organizational culture simply means a set of expectations, values, behaviors, and informal and formal practices that elaborate a quirky corporate environment. The Safety culture is fixed in the fabric of organizational life. This culture impacts the organizational business, evaluates the leaders of the organization, threatens the organizational employees, serves the organizational customers, handles the performance and productivity, etc. The common explanation of the culture is 'the way things are done around here'. Safety culture is the organizational culture's aspect that is related to safety management and health. Safety culture is defined by the group/individual values, perceptions, attitude, behavior pattern, and competencies that regulate dedication to, proficiency, and the style of the organizational's safety and health management.<sup>[11]</sup> The process of patient safety is initiated by the pattern of organizational and individual behavior, simply based upon values and beliefs, that seek to deduct patient harm, which in the end comes up with the care delivery process as a result. The role of using safety culture for any industry reduces cost, improves the industry's reputation, and prevents injury.

- A vast number of factors affect the maintenance, and development of a safety culture, some of them include:
- Communication (tacit and explicit) on safety, within the organization, and incident reporting systems.
- Blame appointment, learning and managing from incidents, safety systems investment, and management procedures in an emergency.
- Awareness and training of human factors.
- Cultural influences, like societal acceptance, of a willingness, and open comments to stand up and be counted.



# Figure 1: PROCESS OF PATIENT SAFETY

#### Need for Safety Culture in Hospitals

In every hospital, safety management is a vital part of the system. Safety culture makes the healthcare unit more trustworthy for the patients. A "Safety Culture" generally represents the attitudes of the employees about the organization's approach related to safety, the organization's perceptions of any risk, responding beliefs, engagement, and controlling risk, in activities that reinforce and represent a safety culture.<sup>[2]</sup>

Each year, millions of patients suffer from the dangers that come with the hectic and demanding critical care unit. They don't need additional, avoidable risks like infections and prescription mistakes. <sup>[3]</sup> Annual patient admissions to critical care units average around four million. Significant threats to patient safety exist in the critical care setting. It's a hectic, complex environment that regularly necessitates caretakers making split-second, high-risk decisions. Unintentional injury to a patient resulting from any component of the healthcare system is referred to as an adverse event. According to research, adverse events occur 81 times out of every 1,000 patients per day, and over half of them are thought to be avoidable.<sup>[4]</sup> Medication error is one example of such an occurrence, but it is not the only one.<sup>[5]</sup>

The common categories of errors include

- Medication errors,
- Communication and handoff errors,
- Teamwork errors,
- Equipment malfunction
- Healthcare-associated infections, and
- Surgical errors

Hospitals from different countries suffer a lot while handling their patients for have less safety culture for the patients and for the organization itself. The main intention of the hospitals is not to harm any patient during treatment or not to take any wrong steps. <sup>[6]</sup> Critical care units in a hospital are the highly maintainable units among all units, so, the equipment has to be updated, and quality product has to be used by the hospitals for the betterment of their patients, which will gradually improve the quality and safety of the organization on a day-to-day basis.



### Figure 2: Steps in strengthening patient safety

Risk Management and the Patient Safety unit at hospitals have been conducive to shaping and advancing agenda of the patient safety worldwide. <sup>[7]</sup> The improvement can be done by focusing on the strategic areas, such as:

- By providing global fostering collaboration and leadership between the relevant stakeholders.
- By setting action and global priorities.
- By developing tools and guidelines.
- By providing building capacity and technical support.
- By engaging families and patients for safer healthcare.
- By monitoring advancement for patient safety.
- By conducting research on the area.

Carrying forward the key strategies area to expedite sustainable advancements in patient safety. The hospitals intend to increase the patient experience and reduce risks and attain better health outcomes at lower cost.

#### **Existence of tools measuring Patient Safety Culture**

The culture that surrounds patient safety is crucial for evaluating the standard of medical care. As one of the global concerns that need attention, it is important to build a reputation for patient safety in healthcare. <sup>[8]</sup> About 1 in 10 patients worldwide reported experiencing harm while receiving hospitalization and problems like prescription errors are the third leading cause of mortality in many developed countries. A patient's safety is now in danger from risk factors including bed falls, drug side effects, truancy, diseases, work, and stress. <sup>[9]</sup> However, studies on healthcare quality were underrepresented in the healthcare sector, particularly when it came to managing unwell patients in the critical care unit. In a cross-sectional study, a high pace of work (quick work with time pressure) was found to reduce the utilization of patient-centred care, while transformational leadership, sound staffing and good communication increased it. But lack of resources and necessary support tools, hinder implementations of necessary actions required to promote patient safety culture for healthcare organizations. <sup>[10]</sup> Determining the values, beliefs, norms, and behaviors that are encouraged, anticipated, trusted and rewarded in an organization helps in assessing the Patient safety culture at different levels, from the individual unit to the department, organization, and the system.

Along with improving safety culture, assessing the safety culture in health organizations is equally important. Understanding the status of the safety culture will further open avenues for its transformation. Safety culture assessment tools can include management assessment or staff perspective, or combined elements of both. Management assessment focuses on safety policies and leadership strategies. Staff assessment includes structured surveys or questionnaires designed to operationalize various safety culture domains. One such tool that measures the healthcare workers' safety attitude is the Safety Attitudes Questionnaire (SAQ). The device seeks to pinpoint potential flaws in hospital areas and inspire initiatives that reduce patient harm <sup>[11]</sup>. It is a refined Intensive Care Unit Management Attitudes Questionnaire (FMAQ). <sup>[14,15]</sup> The SAQ has been adapted for use in operating rooms (OR), general inpatient settings, and ambulatory clinics, along with intensive care units (ICU). <sup>[13,16]</sup> Each version is the same with minor modifications to reflect the clinical area. The SAQ elicits caregiver attitudes through the 6 factor analytically derived climate scales: teamwork climate; safety climate; job satisfaction; perceptions of management; working conditions; and stress recognition. The SAQ is a single-page (doublesided) questionnaire with 60 items and demographic information (age, sex, experience, and nationality). The questionnaire takes approximately 10 to 15 minutes to complete. Each of the

60 items is answered using a five-point Likert scale (Disagree Strongly, Disagree Slightly, Neutral, Agree Slightly, Agree Strongly). Helmreich et al. expanded their work to produce the Operating Room Management Attitudes Questionnaire (ORMAQ)<sup>[17].</sup> This measures the operation theatre staff's attitude to teamwork, stress, hierarchy, and error.

Along with knowledge base and technical competency, other non-technical skills such as communication, leadership, resource management and decision-making are equally important. Intending to streamline communications inside the OR, the WHO Surgical Safety Checklist<sup>[18]</sup> is now mandatory, to ensure that all team members are aware of patient and procedure requirements in OR. The success of the Non-Technical Skills (NOTECHS) <sup>[19]</sup> Scoring system in the aviation industry, prompted several adaptations initially in anesthesia <sup>[20]</sup> and then in surgery. NOTECHS classifies NTS into four categories, leadership & and management; teamwork & and cooperation; problem-solving & and decision-making; and situational awareness, with a 5-point scoring system for each category. To make it more reliable in the operating room. Sevadalis et al. added a fifth category to the NOTECHS scale, called communication and interaction <sup>[21].</sup>

This later leads to the development of OTAS<sup>[22]</sup>; Oxford NOTECHS<sup>[23]</sup>, OSTAS<sup>[24]</sup> and EPOC<sup>[25]</sup> which provide whole-team assessments. ANTS<sup>[26]</sup>, NOTSS<sup>[27]</sup> and SPLINTS<sup>[28]</sup> focus on sub-team performance.

The Anaesthetists' Non-Technical Skills (ANTS) System is a behavioral marker system developed in Scotland <sup>[29]</sup>. ANTS describes the main observable non-technical skills associated with good anesthetic practice. The goal is to provide a tool

to guide assessment in an explicit and transparent manner. The ANTS System comprises a three-level hierarchy. At the highest level are four skill categories and beneath these are fifteen skill elements.

The Non-Technical Skills for Surgeons (NOTSS) rating scale was developed in 2006 with a focus on surgeons' intra operative non-technical skills <sup>[30]</sup>. Parallel to cognitive skills, interpersonal skills used by surgeons during critical incidents in the operating room were taken into consideration.

The Observational Teamwork Assessment for Surgery (OTAS) aims to capture teamwork through direct real-time observation of sub teams in the OR comprehensively. <sup>[31]</sup> OTAS distinguishes between different sub teams within the OR (ie, surgeons, anaesthesiologists, nurses) at different stages of a procedure (ie, pre-, intra-, and postoperative).

Proficiency is best regarded as a composite function of knowledge and innate ability for skill acquisition and experience in execution. The achievement of proficiency in the execution of an operation can be studied by human reliability assessment (HRA) techniques <sup>[32]</sup>, which have been adopted in surgical care <sup>[33, 34]</sup>. In contrast to industrial HRA, clinical HRA is based on observational data capture and is thus referred to as observational clinical HRA (OCHRA). OCHRA has been developed to detect errors and near misses during a surgical performance by analyzing operating videos

The Agency for Healthcare Research and Quality (AHRQ) and Medical Errors Workgroup of the Quality Interagency Coordination Task Force (QuIC) sponsored the development of the Hospital Survey on Patient Safety Culture. The HSOPSC comprises 42 items with 12 basic dimensions, including 2 outcome dimensions and 10 safety culture dimensions.<sup>[35,36]</sup> The hospital survey is designed specifically for hospital staff and asks for their opinions about the culture of patient safety at their hospitals. The survey can be used to: raise staff awareness, assess the status, identify strengths and areas for improvement, change in trends over time, cultural initiatives and interventions, and Conduct comparisons within and across organizations.

MaPSaF was originally developed by Dianne Parker, Sue Kirk, Tanya Claridge, Aneez

Esmail and Martin Marshall in a collaborative project supported by the National Primary Care Research and Development Centre, University of Manchester.

MaPSaF (Manchester Patient Safety Framework) helps the team to recognize that patient safety is a complex multidimensional concept. It facilitates reflection on the current patient safety culture of a given organization; stimulates discussion about the strengths and weaknesses; highlights any differences in perception between staff groups; helps understand how more mature safety culture might look; helps to evaluate any specific intervention to change the safety culture of the organization. <sup>[37,38]</sup>

A safe atmosphere encourages patients to consider a more energetic position in their healthcare practices. The communication process, fruitfully treating patients, and providing an easily understandable process of rules to the patients is very necessary to build a hospitable organization <sup>[39]</sup>.

Patient safety culture assessment helps to learn many unknown facts about the organization and helps to the organization to update new features <sup>[40]</sup>. Organizational culture, safety culture, and patient safety culture in hospitals all over the world are as important as their consumers.

# **RESULTS AND GAPS IN THE REVIEW OF THE LITERATURE**

Attitude is recognized by the behavior of individuals in a stressful situation and their perceptions toward team and hierarchical support while dealing with circumstances in highrisk areas. Results of the different patient safety measuring tools have shown varying results depending upon the country's demography and culture.<sup>[41,42,43]</sup> However, none of the studies have discussed the distress caused by external forces and how to deal with it while making necessary decisions in an organization.

Many studies have attempted to measure Patient Safety Culture in India but they are limited to particular specializations or hospitals only leading to the Ceiling Effect in results outcome and the sample size was not relevant for comparing the tool in other states of the country <sup>[44]</sup>. Various government schemes have been introduced to cut down the basic cost of healthcare services, which has influenced the working criteria and routine practice of both the public and private sectors. Providing the best quality care and promoting safety to patients works in parallel. For improving the quality of care effectively and appropriately, assessment of quality care and patient safety at regular intervals is equally important. There is a need for quality research with a defined goal, concentrated on critics of the healthcare industry in India where the developmental aspect is still a challenge.

Different aspects of Patient Safety Culture need to be analyzed in more depth to provide equal opportunities for quality care and will help construct frameworks adapted to other states and cultures <sup>[45]</sup>. There is a large per capita dedicated to healthcare in different countries, however various adverse events due to patient error and communication gaps are still reported by researchers which need to be studied in India as well <sup>[46]</sup>. Many studies in India are focused on patients' perceptions whereas data related to caregivers' perceptions is also required for better minimizing the gaps between the two

and better understanding of patient safety <sup>[47]</sup>. Researchers should deliberately focus on factors predicting medical negligence to report a causal relationship among them and evaluate organizational capacity in dealing with those factors<sup>[48].</sup>

Very few studies have been found to follow mixed methodology (qualitative as well as quantitative) of connecting Information Culture to Patient Safety in India <sup>[49,50]</sup>. Most of the studies in India were confined to a particular hospital or sector or specialization of doctors therefore generalization of results is not possible and none of them compares or correlates to the ongoing scenario in hospitals <sup>[51,52]</sup>. Very few studies are available to check the impact of organizational changes or the introduction of new policies on the behavior of healthcare workers [53,54].

For the certified hospital respondents, the result was more likely two times to have developed patient safety culture than private hospitals who are non-certified <sup>[55]</sup> Each year, approximately 134 million threatening events crop up in hospitals, and badly resulting in over deaths of 2.6 million. Globally, 4 in every 10 patients are injured in outpatient and primary health care, and over 80% of those injury is preventable <sup>[56]</sup>. Significantly, the recommendations observed in this study will be beneficial for other hospitals in the country as well as in countries where similar cultures exist or where parallel situations are noticed during patient management.

### CONCLUSION

Preventing patient damage is the aim of high-quality medical care. Incorporating patient safety culture tools as a part of the hospitals and used in the treatment or the process of making decisions, developing, and so on for the betterment of the healthcare organizations will ensure organizational safety culture norms for better quality care of the patients. Additionally, ensuring that patients are well-educated about their prescriptions lowers the possibility of side effects occurring. Collaboration is essential to ensure that everyone getting medical care is handled with the highest respect.

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