

Promote a Culture of Safety: Revisiting the Safety Cross and Run Charts

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Abstract

Patient Safety has been a challenge for healthcare facilities worldwide. Ensuring the safety of the patient is the duty of each healthcare professional as emphasised in the Hippocratic oath, “above all, do no harm”. Nurses in the healthcare team are pivotal in the provision of patient care. They spend more time with patients than others and are in direct communication with the patient and family, so they are better placed to mitigate harm. Hence nurses need to be vigilant, engaged and invested in patient safety and improvement in quality care. Nursing education and training too should serve as a platform for increased efforts in this direction and include opportunities for continued learning. Discussed in this paper are two simple measures such as ‘safety cross and run charts’ that can be used to promote patient safety by recognising risks and preventing harm or adverse events.

Key words: Patient safety, Safety cross, Run chart

On 17th of September every year organisations globally are geared up to celebrate the World Patient Safety Day. The day is marked by activities to raise awareness and provide impetus to safer services and safety culture; it is time to revisit the utility of a simple yet powerful tool, the ‘Safety Cross’ to elicit real time data on patient safety measures.

Patients enter the healthcare system to receive healthcare services. Sadly, instead of walking the road to recovery, some patients walk the harm’s way. Most of the harms caused during healthcare are preventable. World Health Organization reports that millions of patients worldwide suffer harm or death every year as a result of unsafe healthcare practices. Notably, healthcare-associated infections occur in 7 to 10 of 100 hospitalised patients, diagnostic errors in about 5 percent of adult outpatients, surgical complications in upto 25 percent of patients and unsafe injections transmit infections like HIV and Hepatitis B and C (WHO, 2022). The alarming rise in patient harm coupled with the increasing complexity of the healthcare settings has brought about a paradigm shift to focus on patient safety initiatives and safeguards.

So what is patient safety? According to AHRQ Patient Safety Network (2021) it is “freedom from accidental or preventable injuries produced by medical care.” The widely seen patient safety

threats in the healthcare facility include, but is not limited to, diagnostic and treatment errors, communication breakdowns, healthcare-associated infections, medication errors, falls, burns, and pressure injury. Patient safety aims to prevent and reduce risks, errors and harm that may occur to patients during provision of healthcare. Patient safety has also emerged as a distinct discipline in response to various initiatives following the publication of a series of landmark reports by the Institute of Medicine on prevalence of patient harms in healthcare facility and the resultant transformations in thinking. Thus quality improvement has been the focus of patient care in the past decades. Despite WHO’s emphasis on adequate teaching of patient safety and quality improvement during professional training much needs to be achieved (WHO, 2022).

Although every encounter of the patient at the healthcare facility is fraught with an element of risk of known or unknown nature, the risks arising from failures in the healthcare facility need to be mitigated every time and for every patient by practicing the following aspects (Patient Safety Movement Foundation, 2022):

- Transparency and clarity in policies and procedures
- Data collection for continuous improvements in patient safety practices
- Adequately training of healthcare workers in patient safety practices

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- Strong commitment of the health facility to patient safety practices

Engaging patients and family members in care

Early identification of risk is key to zero harm. Many lessons and models on safety culture have been drawn from high reliability organisations (HROs) such as nuclear power plants, aviation industry, air traffic controls, and others that consistently prevent adverse events despite being inherently complex and carrying out hazardous work. Even a minor error in these HROs can be catastrophic though adverse events are rare, as these organisations are relentless in their pursuits to maintain safety culture at all levels. HROs do not ignore any failure or are fixated on how things fail, no matter how small. In fact, HROs even identify and address potential breakdowns. Thus a culture of safety refers to the shared values, beliefs, attitudes and behaviours on patient safety among the staff in a team, unit, or organisation (Sorra et al, 2016). A culture of safety defined by AHRQ (2021) is where "healthcare professionals are accountable for unprofessional conduct, yet not punished for human mistakes; errors are identified and mitigated before harm occurs; where systems are in place to enable staff to learn from errors and near-misses; and prevent recurrence." This definition sums up the essence of the safety culture, placing the emphasis on the system of healthcare delivery and to correct dysfunctional systems, entrenched in the belief that (i) human beings tend to err (ii) expecting perfect care delivery from humans is unrealistic (iii) healthcare system is ever increasingly complex and high-stress workplace (iv) errors can be identified early (v) errors can be prevented; (vi) lessons can be learned from the errors (requiring open reporting and transparency) and (vii) recurrences can be prevented. Even as individuals cannot be absolved from their responsibility, evidence suggests that when human beings work in error-proof workplace, where systems and procedures are designed to identify and mitigate errors, they are prevented from making mistakes. Traditionally, incident reporting was encouraged among staff members in healthcare facilities to report risks and adverse events. This reporting is only effective and meaningful in a positive safety culture. Therefore, knowing the safety culture is essential for any patient safety.

AHRQ's Surveys on Patient Safety Culture (SOPS), Hospital Survey on

Patient Safety Culture (HSOPSC), the Safety Attitudes Questionnaire (SAQ), and Health Professional Education in Patient Safety Survey (H-PEPSS) are some of the common tools that can help assess the safety culture in a facility. The HSOPSC instrument includes 12 patient safety culture dimensions: team-work within units, supervisor/manager expectations and actions promoting patient safety, organisational learning-continuous improvement, management support for patient safety, overall perceptions of patient safety, feedback and communication about error, communication openness, frequency of events reported, teamwork across units, staffing, handoffs and transition, and non-punitive response to error, using a 5-point Likert-type responses. The Manchester Patient Safety Framework (MaPSaF) measures 10 dimensions: commitment to overall safety, priority to safety; system errors and individual responsibility; recording incidents and best practice; evaluation of incidents and best practice; learning and effecting change; communication about safety issues; staff education and training and team work approach. SAQ assesses nine attributes which involve: job satisfaction, team-work climate, perception of work environment, communication, patient safety, ongoing educa-

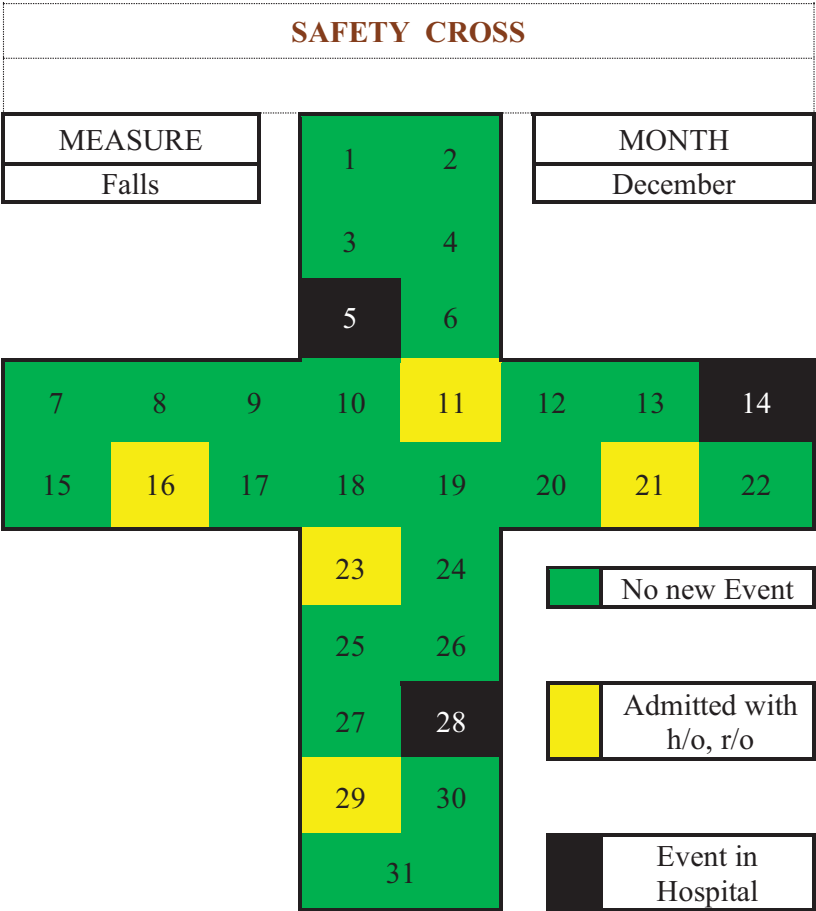


Figure 1: Safety cross showing the data on the metric ‘Falls’.

tion, management of the healthcare centre, recognition of stress, error prevention by using preventive measures. H-PEPSS measures six components of health professionals' self-reported patient safety competence including culture, teamwork, communication, managing risk and understanding human factors.

As healthcare systems continue to look for ways to minimise harm, safety cross is a simple yet compelling visual tool to collect data related to patient safety (Flynn, 2013).

A study by Källman et al (2022) found that the use of cross chart had a greater positive impact on patient safety culture and reporting of adverse events than in units where it was not implemented. Safety cross recognises risk, preventable harms or adverse events by healthcare team members on a daily basis and is discussed within the team at daily meetings. It can empower the entire team with information needed to identify risk and mitigate harm. Nurses are central to this process of establishing best patient safety practices in care (ICN, 2012).

Safety cross was traditionally used in industries to represent employee safety. It is a calendar in the shape of a cross with 31 days marked on it. The chart can be found in the shape of an 'S' too. Each cross represents one month. The event or harm that affect patient safety, i.e., the metrics that concern their area are identified or chosen by the entire team. The colour codes like green, yellow and red are assigned: an event-free day is marked in green; yellow indicates a history or risk for the event or injury; and the day a

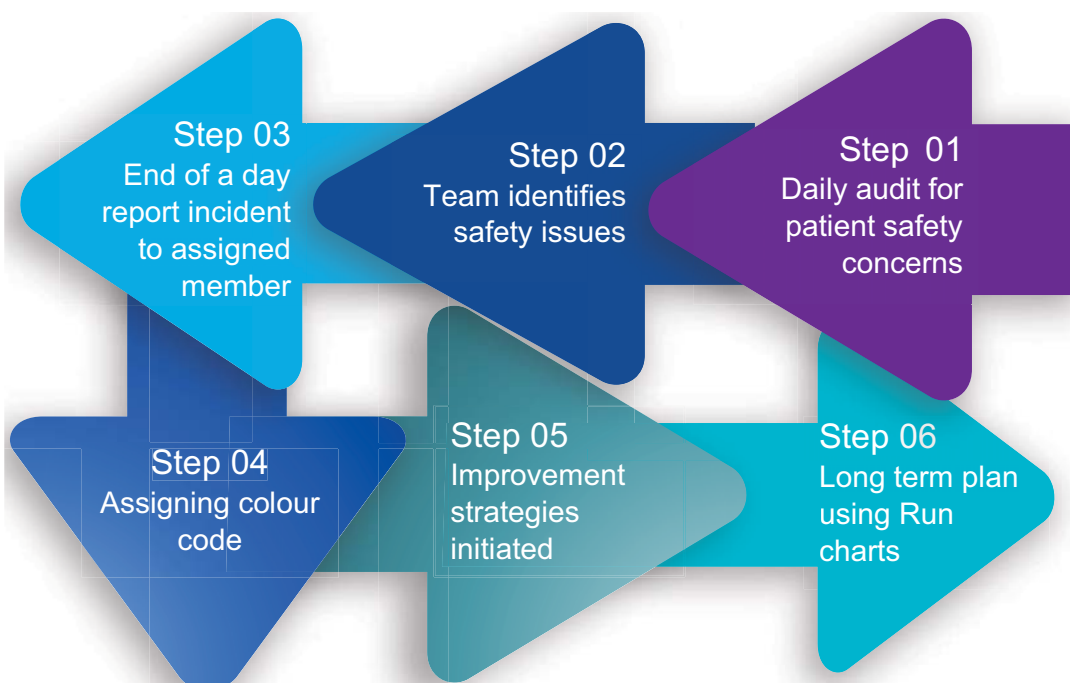


Figure 2: Steps in preparing and using safety cross.

harm or event occurs is coloured red (Fig 1).

One box in the cross is coloured each day. The data on the previously decided metric or measure (falls) is gathered daily and the day on the cross is coloured appropriately: a safe day (no falls) as green, a near miss as yellow and if fall happens, in red. A team member is assigned to chart the findings, collect and store the data for records (Fig 2).

If there are more number of occurrence than one in a day, the exact number can be written in each box. The chart is not meant for a single pa-

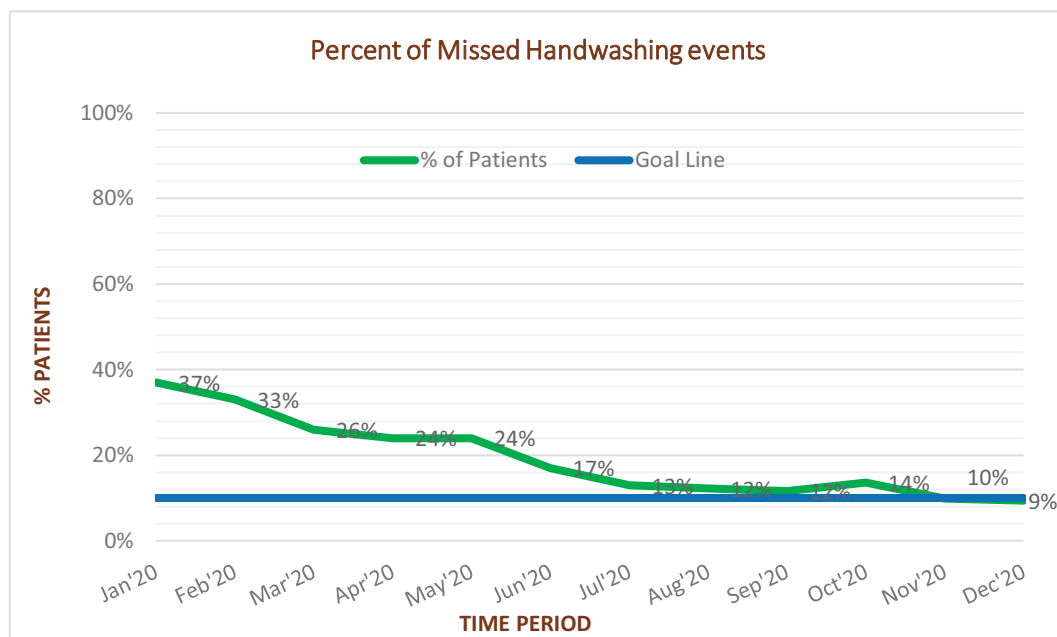


Figure 3: Run chart shows missed hand washing events collected monthly for a year along with a goal line.

tient but for a single metric and any number of patient or events can be entered in a box. Separate safety cross can be created for any number of measures.

Safety cross has been widely implemented in healthcare facilities of many countries like the NHS organisations (England), Ireland, the US and Sweden, while no studies have been reported from India. According to a study by Han et al (2020), it was used to assess the common adverse events which are considered as sensitive indicators of nursing care including medication errors, pressure ulcers, falls, use of physical restraints for more than 8 hours, and healthcare-associated infections such as ventilator-associated pneumonia, central line associated bloodstream infections, surgical site infection, and urinary tract infections. It can be used in any care settings to collect data to keep track of sick days, back injuries, absenteeism, etc; in laboratories to keep count of missing samples, repeat sampling, incomplete labelling, etc. Benefits of using the safety cross are multi-fold.

It represents the felt concerns of the entire team; helps plot data on a daily basis for a whole month and continued till required; engages the whole team to meet up regularly to discuss safety concerns; is a simple tool to use and visually very engaging; is easy to comprehend, and can be displayed in prominent place for all to view; empowers the entire team with real time data on safety concerns; creates awareness within the team and others about a particular concern; helps teams to come up with solutions for improvement; serves as a reminder on a regular basis of what needs to be achieved; it can be converted into run chart and help in review of the data trends; can be used by multidisciplinary teams to review specific data; brings teams together to believe that patient safety is everyone's job.

Schwarz et al (2021) stressed the use of visualisation, the simplicity of reporting, and the possibility to learn by discussing patient safety issues in daily meetings. It is not merely intended for display but to be discussed and debated within the team to understand patterns, act upon and bring about change or improvement in the safety metric.

The data thus collected in a safety cross for many months or years can be converted to a run graph that displays the same data in a time sequence (Fig 3).

Further research are required to identify interventions to improve patient safety culture and competency of nurses; to study the relationship between patient safety competency of nurses and perceived safety culture (Hwang, 2015).

Limitations: Getting the complete multidisciplinary

team on board with competing demands on team time and perceive ownership of the process is a limitation. Continuous feedback and communication from the team members is essential to ensure clarity, consistency and commitment. Team involvement is paramount to successful, sustainable outcomes.

Conclusion

Patient safety is the bedrock of quality health-care. If the healthcare system is to be viewed as a high-reliability industry, healthcare facilities need to be safety culture-driven in delivering safe and high-quality care. Each individual healthcare facility needs to adopt their model for patient safety.

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