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Research & Reviews: Clinical Oncology and Hematology

Kechagioglou P and Dale T. Res Rev Clin Oncol Hematol 2: 106.

DOI: 10.29011/RRCOH-106.100106

Research Article

Evaluation of Safety Culture in a Private Healthcare Organisation: A Prelude to a Quality Improvement Strategy

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Citation: Kechagioglou P, Dale T (2020 Evaluation of Safety Culture in a Private Healthcare Organisation: A Prelude to a Quality Improvement Strategy. Res Rev Clin Oncol Hematol 2: 106. DOI: 10.29011/RRCOH-106.100106

Received Date: 01 December 2020; **Accepted Date:** 03 December 2020; **Published Date:** 10 December 2020

Abstract

Background: A culture of patient safety in healthcare can go a long way in ensuring that patient needs are always cared for. The consequences of not implementing a patient safety culture can be catastrophic for patients, their families, the workforce and the broad healthcare system. Patients can lose faith in the healthcare system whilst the cost of claims can be prohibitive to any investment on Quality Improvement. Staff engagement in the evaluation of patient safety culture is important so that organisations can appreciate where their system deficiencies are and what appropriate improvement actions could be. The aim of this study is the evaluation of the culture of safety and attitudes to risk amongst staff working in an innovative and fast-paced private UK healthcare provider.

Methods: Between October 2019 and January 2020, we distributed the Safety Attitude Questionnaire (SAQ) to all staff in our three flagship centres in UK. We performed face to face staff interviews and observations of processes and procedures, through an independent trainer in Human Factors and we conducted a culture survey on the UK Leadership team and all centre managers, in order to gauge their perception of safety culture. The survey aimed to capture what works well in the organisation, which attitudes needed to be reinforced and which attitudes needed to change.

Results: We received 34 completed SAQs from centre management, chemotherapy and pharmacy, diagnostics and radiotherapy. Staff interviews triangulated the SAQ results, whilst the survey was analysed for themes under three headings, namely what works well, which attitudes needed to be reinforced and which attitudes needed to change.

Conclusions: The study results supported the development of a Quality Improvement strategy in our organisation and are applicable to all healthcare systems.

Keywords: Healthcare, Patient safety, Quality, Quality improvement

New Findings

- The evaluation of patient safety culture within our healthcare organisation was a triangulation between several methods, including a validated safety attitude questionnaire, a survey, staff interviews and clinical observations.
- The study outcomes advised the proposed Quality Improvements which have been implemented in our organisation.
- Healthcare organisations grow at a fast pace and people may experience conflict between business growth and Quality Improvement, which needs to be addressed through regular evaluation of patient safety culture.
- Our evaluation methods and study findings can be applied to other healthcare organisations who are facing similar challenges in sustaining Quality Improvement.

Introduction

The Healthcare market is competitive and healthcare organisations need to align with technological and digital complexities, but also innovate to gain competitive advantage. Within such environments, healthcare organisations need to balance cost efficiency and responsiveness with a culture of patient safety at all times [1]. The Institute of Medicine in its report 'To

err is Human' in November 1999 [2], urges healthcare organisation leaders to create a culture of patient safety and keep quality and safety at the top of their strategic agenda [3].

Patient safety culture refers to the prevention and mitigation of errors through open reporting and discussion of errors within the context of a Just Culture [4]. Effective leadership and teamwork are prerequisites of a sustainable patient safety culture. Errors in healthcare often derive from increasing treatment complexities [5], in combination with lack of adequate supervision and training, protocol and process adherence, as well as inadequate communication between team members [6]. The consequences of not developing and sustaining a patient safety culture in healthcare can be catastrophic for patients and their families but also for the workforce and the broad healthcare system. Patient and communities can lose faith in the healthcare system whilst the cost of complaints and claims can be prohibitive to any investment for innovation, business development and continuous Quality improvement.

Despite the increasing volume of healthcare regulation which governs clinical practice, it is acknowledged that only an organisation-wide approach to cultural change towards patient safety could result in any meaningful and sustainable results [7]. There have been several tools used in healthcare to measure the safety culture of organisations [8,9,10]. The important aspect of any such exercise is the top down engagement of the workforce, spearheading commitment to continuous Quality Improvement. A consistent and encouraging environment for reporting and learning from excellence as well as incidents and errors can lead to small Continuous Quality Improvement changes that will have a positive long-term impact in the organisational culture [4].

The Healthcare industry unlike other industries, such as aviation and nuclear power industries, lacks a strong culture of safety measurement and learning from outcomes. The use of safety evaluation tools is not as well developed in Healthcare as in other industries, even though healthcare practice is equally or more risky than flying and operating nuclear plants [11]. It is important that the healthcare profession learns from other industries and uses systematic data collection on patient safety to make improvement changes.

The organisation under study is a global innovative provider of oncology care which has grown its UK centres by 50% over the past two years and has experienced radical transformation to its services in the same period. The clinical and corporate governance framework has been revised to reflect the complexities of the growth with the purpose of assuring patient safety. However, this is the first time that people's attitude to risk and safety within the organisation has been measured.

The aim of this study is to evaluate the safety culture and attitudes to risk in a complex healthcare organisation, so as to identify any areas for improvement.

Method

Between October 2019 and January 2020, we conducted a number of internal evaluations of patient safety culture using a variety of methods. We chose to concentrate on the 3 flagship centres, which were already inspected by the regulators and awarded outstanding status. The reasons for choosing those centres for the evaluation was to learn from those and ensure a sustainable culture of quality and safety in our organisation.

The Safety Attitude Questionnaire (SAQ) was implemented as the tool of choice for assessing patient safety culture and staff attitude to risk within our organisation. We chose this validated tool as it is commonly used in the National Health Service to evaluate organisational safety. The SAQ has been adapted from the aviation industry, where extensive work on human factors and safety culture has already been implemented. It is also multidimensional, measuring teamwork and safety climate, job satisfaction, perception of stress and management, working conditions [12].

A workshop with the centre managers of all 14 centres and the UK Leadership team took place early in October 2019 to introduce the project and the importance of evaluating the safety culture and attitudes to risk within our organisation.

The schedule of activities was presented starting from the distribution of the anonymous SAQ to all staff in the three chosen centres, including members of the chemotherapy and pharmacy teams, radiotherapy and diagnostics, central management. An informal visit to all three centres was then scheduled and conducted by an independent consultant in Human Factors. The purpose of the visit was twofold, first to observe how processes and procedures were conducted in practice and secondly to perform some informal interviews with staff. The interviews were targeted particularly to staff who did not have the chance or chose not to complete the SAQ at the time of distribution. Anonymised statements were used to derive key themes for analysis. Typical processes observed in the centres were the morning huddles, all handovers of clinical care and the behaviours of staff during scheduled treatment times, focused particularly on teamwork and communication. A culture survey was also distributed to the 10 UK Leadership team members and all 14 centre (middle) managers. The survey contained three open questions which aimed at understanding what works well in the organisation, which attitudes needed to be reinforced and which attitudes needed to change.

The final workshop with the UK Leadership team in January 2020 was used as an opportunity to share lessons learned from the study process, the outcomes from the SAQ, interviews, observations and survey as well as brainstorming action plans. Ideas were shared as to how to improve and sustain a patient safety culture drawing from the staff engagement exercise.

The proposed Quality Improvement initiatives are fully aligned with the organisation's overall strategy and collectively formulate the new Quality Improvement strategy.

Patient and Public Involvement

Patients or the public were not involved in the design, conduct, reporting, or dissemination plans of our research. This is because the study attempted to evaluate the organisational workforce attitude to patient safety which advised an internal quality improvement strategy. The outcomes of the study were disseminated to all staff prior to the implementation of the Quality Improvement strategy.

Ethics approval

Ethics approval was not sought because the evaluation was commissioned by the organisation board as part of an internal clinical governance transformation program.

Results

We conducted a detailed analysis of the safety culture and attitudes to risk within our organisation by engaging and including staff at all levels, from the front line and middle management to the Leadership team[12]. Staff took part in this evaluation, either through interviews, by being observed, through the Safety Attitude Questionnaire or through the culture survey. The inclusion of all stakeholders and their engagement in different aspects of the study reflects the system-wide approach to patient safety in our organisation. It is also important that learnings from past successes and errors are shared amongst all teams and feedback is used to improve safety culture[13].

Survey results

Starting from the Leadership team and Centre Managers (Middle Manager) survey, this aimed at understanding what works well within our organisation, what we need to do more of and what we need to do less. The results of the survey are summarised in (Table 1).

The positive themes that came out from this survey resonated across all teams and included the strong purpose and vision of the organisation, the commitment by all teams to do the best for patient care and the strength of local team working. The positive impact of leadership behaviour in establishing a shared vision and common purpose has been mentioned in Trastek's (2014) paper [1]. Our organisation's strong shared vision and purpose is diffused from top down and it is reflected in our organisation's purpose statement which is about improving patient outcomes whilst offering best care experiences. We believe that sharing a common purpose can empower teams to feel safe reporting errors, learning from errors and applying the learnings by implementing Quality Improvement. We also believe that sharing a common purpose can help the organisation stay resilient during turbulent times, if and when a serious incident occurs [14].

Table 1 – Survey of the UK Leadership team and Centre Managers

What we are doing well	What we need to do more of	What we need to do less
Employee support	Data diligence and audit	Leave staff unsupported
Team working	Time and space to reflect and learn from best practice or failures	Reduce the volume of emails and not use for solving issues
Mandatory training compliance	Internal peer reviews ensure training is completed	Less sign-off of unneeded policies
Cohesive working	More detailed incident reviews incorporating Human Factors thinking to understand root cause	Running parallel projects with same leads
UKLT roles serving well	Say 'no' to maintain focus and prioritise safety	Spend weekend working to catch up on work volume
UKLT put good challenges	Spend more time with team and understand stresses and motivations	Less silo working
100% patient focused and responsive teams	Delegate when practical and appropriate	Jump to conclusions and assume blame when incidents occur
Always respecting patient dignity & confidentiality	Effective & honest communication strategies with teams	Less micromanagement and more ownership and delegated responsibility
Maintain NPS score and employee engagement score	Better administration processes and workflows	More focused approach to staff meetings on what is safety critical
Communicate well with teams	Celebrate excellence and good news and performance regularly and more meaningfully	Less in-house staff interactions at the expense of network interactions
Maximise Patient experience	Business development to increase volumes of referrals	
Having strong purpose	Improve patient pathways	
Local team working	Improve culture within administration teams	
Collective desire to do best	Learn from each other, identify and resolve barriers to safe culture	

There were five positive safety attitudes that people identified as prominent but felt that the organisation should put more focus on, in order to embed more broadly across all business units. Those safety attitudes have also been mentioned in previous Quality Improvement work [15,16] and included: 1. internal peer review and audit of clinical practices to ensure standardisation, 2. dedication of time, space and support for staff self-reflection and learning from errors, 3. a team approach to detailed incident discussions in order to understand root cause, 4. removal of barriers to safety culture and 5. celebration of good practice. Our response to this feedback was a collective effort to strengthen our mission statement by including key performance indicators (KPIs) for patient safety in our organization [17]. Our new patient safety KPIs included amongst others the need to have all patient care plans peer reviewed and be fully compliant on internal and external audits.

Staff told us that they value having the right resources and conditions to perform their best life's work serving patients. On further elaboration, front line staff and middle managers felt that often the pace of work is too fast and does not allow comfortable time to spend self-reflecting and deep diving into errors and incidents. What teams described is the difficulty to achieve balance between innovation for business growth and continuous Quality Improvement, which is a trade-off amongst many fast-paced organisations and not limited to healthcare [18,19]. One of the commonest barriers to Quality Improvement in healthcare organisations is the lack of available time to devote to those initiatives by clinicians and a constant conflict with business priorities. Unless Quality and safety initiatives are embedded within a culture of continuous Quality Improvement and reflected in the overall organisation strategy, there is a risk of them stalling, being partially adopted or failing to diffuse across the organization [20]. As a result of this feedback, we have implemented a multi-disciplinary Risk and Safety Committee (RSC), with representative members from all craft groups and grades in the organisation. The RSC commitment has been scheduled in people's roles together with dedicated time to perform incident investigations and analysis of trends [21].

Regarding attitudes to risk and safety that needed to be minimised, there was strong alignment amongst staff which we have summarised in the following three themes: 1. less micromanagement, more ownership and autonomy, 2. reduce silos by leveraging the power of the network in an integrated model, 3. less assumption and more effective communication within and between teams. The themes very much align with current literature of organisational resilience in healthcare, which confirms that an integrated model of care within organisations and cross organisations, results in a better coordinated system of care, leading to better patient outcomes [22]. Openness, autonomy and a culture of experimentation has been shown to also enable organisation resilience, which can result in more effective implementation of Quality Improvement[14]. The implementation of a Just culture in the context of a resilient organisation, would enable a more open and transparent discussion of root causes behind errors and would empower staff to make small and sustainable Quality Improvements.

Safety Attitude Questionnaire results

The SAQ tool aiming at evaluating staff attitudes to risk and safety was conducted in our three nominated centres, between October 2019 and January 2020. The results (34 SAQs, 90% response rate) are shown in (Table 2), split between the main staff groups who took part in the study, which are 1. chemotherapy and pharmacy, 2. radiotherapy and diagnostics, c. centre management (middle management). The scored results ranged from (1) representing strong disagreement to (5) representing strong agreement, using a Likert scale. The SAQ question categories aim at evaluating the degree of teamwork, safety climate, job satisfaction, stress recognition, perception of management and working conditions.

Table 2 – SAQ results

	Chemotherapy & Pharmacy	Radiotherapy & Diagnostics	Centre Management
Teamworking	4.2	3.5	3.4
Safety climate	4.1	4.6	4.6
Job satisfaction	4.4	4.1	3.8
Stress recognition	4.2	3.5	4.1
Perception of management	3.5	3.8	3.9
Working conditions	3.3	3.6	3.3

1.Strongly Disagree, 2. Disagree slightly, 3. Neutral, 4. Agree slightly, 5. Agree strongly

All staff groups felt that the incident reporting culture within the organisation is healthy and people felt safe to report incidents and errors. Most people understood the definition of an incident as well as the scoring of incidents using the national risk scoring matrix. They also understood the importance of learning from near hits which can help prevent risk [23]. However, people did not feel that they devoted enough time within their teams to deep dive into the true root cause of incidents and this was particularly prevalent in radiotherapy and diagnostics, more so than in chemotherapy and pharmacy. There was also a widespread opinion that feedback following an error or incident was not consistently given, which is an important element for changing attitude to risk and preventing future incidents and errors [13].

The main barrier to teams getting together and discussing errors in depth was the lack of available time within the job roles to perform this activity [20]. The identified conflict between business development and business as usual, may have contributed to the lower job satisfaction score amongst centre (middle) managers [18,19]. The investigation of incidents and the subsequent action plan requires whole team dedication and involves the implementation of a Plan Do Check Act process. Implementing PDCA consistently, ensures that a true root cause analysis leads to specific action plan, with clear timeline and ownership, followed by measurement of outcomes and further refinement [4]. In addition to the time constraints which is being addressed through offering dedicated time for people to attend the weekly Risk and Safety Committee and dedicated time for the investigation of incidents, the lack of Human Factor training has also been identified as limiting factor in our safety culture[24]. To help address this deficiency, we worked with an independent consultant in Human Factors to implement a bespoke and tailor-made module to the needs of the organisation.

Devolution of responsibility and ownership of quality and safety locally seemed to be the preferred model amongst middle managers (registered centre managers), rather than a more centralised governance body. A Quality Improvement Championship (QIC) scheme, consisting of patient safety and Quality Improvement champions in every centre was suggested as a mechanism to devolve ownership of Quality and Safety within centres. A QIC scheme involving middle managers and front-line staff from all craft groups can support a strong safety and Quality culture[25]. Distributed leadership from the UK Leadership team to the middle managers in centres could create the supportive culture for front line people to own governance and Quality improvement activities, resulting in high performance teams and higher job satisfaction [26]. Our response to this feedback was the recruitment of 14 Quality Improvement Champions across all our centres, through an open expression of interest invitation. We recruited mostly people from the front line to enable engagement and buy in from the front line on Quality Improvement projects [25]. People came forward voluntarily for the role which is important and shows the internal motivation of these people to do more about patient safety.

Finally, all staff felt proud about working in our organisation and most scored highly on job satisfaction. However, there was evidence of lack of recognition of the effects of stress and tiredness in some teams, particularly in radiotherapy and diagnostics, which may increase the risk of errors. Radiotherapy and radiology are two hazardous specialities and there is a high risk of errors without proactive risk analysis and reactive investigation of errors[6]. Working and communicating well within and between teams is important in navigating through complexities and mitigating risks. The creation of cross functional teams could maximise trust and collaboration, lead to practice standardisation and more opportunities for Quality improvement [27]. As a response to this feedback, we have included within the Human Factor training module tools to help people and teams recognise stress in themselves and others. We also developed an Open communication and non-punitive Just Culture policy which has been implemented across the organisation.

On site observations

The on-site review of our selected centres was conducted between October and November 2019 and triangulated the information that was collected through the survey, interviews and the SAQ. The observation visits were made by an independent consultant in Human Factors in order to remove any bias.

All staff from front line to middle management demonstrated passion and commitment to patient care, operated a lean model of care and were generally compliant to policies and procedures, which aspired a safety culture.

However, there was some variation in certain practices between centres such as the way huddles and clinical handovers were conducted, the time devoted to those and the extent of discussion about incidents and errors. The observations made confirmed the need to provide regular and standardised training on Human Factors within the organization [24] which we have addressed through the new Human Factor training module.

Discussion

The aim of this study was the evaluation of patient safety culture and attitudes to risk within our organisation, with the view to creating a Quality Improvement strategy to address any weaknesses in the system. Developing and sustaining a culture of safety and Quality serves our organisational purpose, which is to create care experiences that lead to best possible clinical outcomes for our patients. The evaluation consisted of a combination of direct observations of clinical practices, face to face interviews, the anonymous Safety Attitude Questionnaire and the culture survey. The results of the evaluation advised the revised Quality Improvement strategy for our organisation.

Organisation priorities

The following organisation priorities have been identified through the study which supported the design of our Quality Improvement strategy (Table 3).

- Shared purpose and vision, patient-focused care and effective teamwork
- Internal peer review and audit, clinical practice standardisation
- Time and space for staff self-reflection and learning from errors
- Team approach to detailed incident discussions for understanding root cause

- Understand and remove barriers to patient safety
- Celebrate good practice and performance
- Ownership and autonomy of safety culture
- Sharing lesson learned across network, reducing silos
- More effective communications within and between teams

Table 3 – Quality improvement strategy linked to organisational priorities

Quality Improvement initiatives	Status
A weekly multidisciplinary risk and safety committee with members from the Leadership team, middle management, integration, operations, Quality, and front-line leaders. Rapid and effective resolution of incidents, with shared learnings feeding into Root Cause Analysis and Quality Improvement registry.	Launched 23d October 2019 and operating since on a weekly basis
Redesign of clinical governance structure introducing functional subcommittees by craft group, feeding into central clinical governance committee. Devolution of leadership and ownership of patient safety to middle management who lead the front line ensuring effective communication and internal peer review within and between teams.	Subcommittees were launched January 2020. They have evolved since to include a separate radiation safety and a radio-pharmacy subcommittee
Quality Improvement champion scheme to include people from all craft groups acting as Freedom to Speak guardians, championing risk analysis and root cause analysis, training and mentoring others, be the champions of quality improvement projects.	Launched in May 2020 and training is work in progress for all champions and is due completion September 2020
Our strong shared vision and purpose was reinforced by the addition of patient safety and quality improvement in the revised global strategy and global operational model.	New Global Quality and Safety Key Performance Indicators agreed and disseminated May 2020
The adoption and diffusion of an open communication and a non-punitive Just Culture policy when reporting and investigating errors.	Policy Introduced November 2019
Centralisation of policy review and ratification to ensure standardisation of documentation and processes, risk analyses and audit.	Launched January 2020 and revised June 2020
New Human Factor Training module to empower and train people in IRMAS[2]	Launched June 2020
Quarterly Governance newsletter celebrating successes and practice excellence.	Launched May 2020

SAQ benchmarking

Our SAQ results are slightly different to the results of other studies which showed that non-clinical managers are more optimistic around the culture of safety than front line staff [28]. Our study showed that middle managers in our centres have got similar perception of safety culture with front line staff. The alignment between middle management and front-line staff is important, because a misaligned perception of Quality and safety can lead to middle managers failing to escalate safety issues to the UK Leadership team.

Human Factors

Lessons learned from this study include the lack of adequate training on Human Factors as well as the lack of routine evaluation of patient safety culture within our healthcare organisation which are both essential in guiding Quality Improvement initiatives [24]. Our observations around practice variation in combination with staff feedback on lack of available time and space for reflection and peer review and the low scores on stress recognition in some groups, have led us to design and launch a bespoke and tailor-made Human Factor training module for the organisation, as part of our new Quality Improvement strategy.

We wanted to characterise the goals of the Human Factor training module and engage all people within the organisation, so we came up with the acronym IRMAS[2] meaning:

Identify Barriers to Patient Safety in specific contexts

Recognise that People's emotional and personal stress state can affect performance

Modify the environment for people to do life's best work

Assure a Culture of Safety which promotes incident reporting, root cause analysis and practice change through shared learnings

Situational awareness and **S**upervisory behaviour

This study is the initial evaluation of patient safety culture in our organisation, which has advised the content of our Human Factor training module. The effectiveness of the training module in terms of improving safety culture and attitudes to risk will be evaluated in the future using the same tools we used in this study [24]. We will aim to measure safety culture across the whole network rather than selected centres, using interviews, direct observations, the SAQ and the culture survey tool, once all staff have completed the training module.

Risk and Safety Committee

In response to staff testimonies about error reporting, teamwork discussion and the need for dedicated time and space to discuss incidents, we implemented the weekly risk and safety committee (RSC) in October 2019. The RSC is a multi-disciplinary forum consisting of members of the UK Leadership team, front line, middle management and its purpose is to assure incident reporting and learning from incidents and trends, promoting a safety culture within the organization [21]. In addition, the committee facilitates the root cause analysis of incidents utilising the lean Six Sigma methodology. An initial audit of the committee's effectiveness the first six months, revealed more than 300 actions and more that 90% of those have already been successfully implemented. In addition, the adoption and diffusion of Just Culture combined with the introduction of Quality Improvement Champion scheme has led to a healthy incident reporting culture in our organisation.

Just Culture and Quality Improvement Champion Scheme

The aim of this evaluation study was to measure and make steps to improve the patient safety culture in our organisation, so we can continue to innovate safely for better cancer patient outcomes. Our staff valued an Open communication and Just Culture in the prevention and mitigation of errors, which we have implemented and diffused through our new policy[4]. People on the front line and middle management valued autonomy and ownership of patient safety, hence we created the Quality Improvement Champion scheme, with front line team members recruited to this role to support QI projects and also act as Freedom to Speak Guardians[25].

Study Strengths

The strengths of our study include the use of the validated SAQ tool to evaluate patient safety culture, the results of which were triangulated with staff interviews as well as an anonymous culture survey. We also assigned an independent consultant in Human Factors to observe clinical practices and perform staff interviews in our centres so as to eliminate bias if an internal person performed the observations and interviews. We believe that the results of the study are a true representation of the patient safety culture in our organisation and the methodology we used has been enriched compared to previous work where surveys were the only tools used [29]. We have instead utilised a combination of the SAQ tool, culture survey, staff interviews and direct observations of processes and procedures within centres.

Study Limitations

We recognise a study limitation which is the role of doctors in patient safety culture. The evaluation did not include doctors because doctors practising in our centres are not employed by the organisation unlike other countries where we operate globally. However, it is important that we evaluate doctor perception of the organisation's culture of safety in our future study when we will re-evaluate patient safety culture after embedding our Quality Improvement strategy.

We recognise that the study was based on a single private healthcare organisation and may not be representative for all

healthcare systems. However, our organisation works within an integrated model and in collaboration with other private providers, the NHS and academic institutions which means that our results can be applied to those organisations as well. In addition, we are regulated by the same healthcare regulatory body as the rest of the UK healthcare system, which reflected not only on the choice of our evaluation tool (SAQ used widely in the NHS) but also on the Quality Improvement initiatives that align with the National Patient Safety Agenda.

Conclusions

The evaluation of the culture of safety and attitudes to risk within our organisation has given us the insights into the creation of a sustainable Quality Improvement strategy. The initiatives that have been implemented in this program have been inspired by our own workforce and are a direct outcome of the study results.

The key lessons learned from the study is that in order to sustain a culture of safety within a fast-paced innovative healthcare provider, there needs to be a strong purpose and shared vision for safety, an organisation-wide commitment, with time and space to Quality Improvement and an open Just Culture which stimulates learning from errors. Our Quality Improvement strategy addresses all those areas.

Abbreviations

SAQ Safety Attitude Questionnaire

UKLT UK Leadership Team

KPI Key Performance Indicator

NPS Net Promoter Score

RSC Risk and Safety Committee

PDCA Plan Do Check Act

QIC Quality Improvement Championship

Declarations

The authors have no financial or any other conflict of interest and have not received funding for this study.

Acknowledgements

Not applicable

Authors' contributions

All authors have been actively involved in the program idea construction, design and the implementation of the study.

Funding

There is no funding for the study.

Competing interest statement

None

Ethics and Consent to Participate

No ethics was obtained for the study because it is a Quality Improvement study and does not involve any identifiable data collection and analysis. The study was approved by the UKLT who also commissioned the evaluation and the design of the Quality Improvement strategy.

Consent for Publication

Not applicable as no identifiable information or images are included in this protocol.

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