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Culture as a cure: Assessments of patient safety culture in OECD countries

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CULTURE AS A CURE: ASSESSMENTS OF PATIENT SAFETY CULTURE IN OECD COUNTRIES

Katherine de Bienassis*, Solvejg Kristensen, Magdalena Burtscher*, Ian Brownwood,* and Niek Klazinga***

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Abstract

While health care quality has been improving on average in OECD members countries, **patient safety remains a central priority for policy makers and health care leaders**. All too often patients are unintentionally harmed through the provision of care. Poor safety comes at a price. OECD estimates suggest that up to 15% of inpatient expenditure is consumed by treating the effects of harm that occurs during the course of medical care. Policy makers are moving their focus to risk mitigation, learning-based health systems, and health care environment design that takes human factors into account. **A culture of patient safety is foundational to these efforts.**

The growing sentiment across health systems is that measuring what goes wrong in health care is not enough. Health care systems require measures that assess their capacity and ability to deliver safe care. This is why measures of patient safety culture (PSC) have been increasingly used to understand the presence or absence of safe health care environments. **A growing research body has found that PSC is associated with numerous positive outcomes, including improved health outcomes, improved patient experience, and organisational productivity and staff satisfaction**. Meaningful information about PSC can guide policy makers, hospital mangers, and staff in improving and strengthening their cultures and improving safety outcomes.

Tools to measure PSC have proliferated in recent decades and are now in wide-spread use. This report includes findings from OECD countries on the state of the art for measurement practices related to PSC. Many countries have used PSC measures in their national health systems (including Austria, Belgium, Iceland, Luxembourg, Portugal, Spain, Sweden, and the United Kingdom) or regional context (including Australia, Austria, Canada, Denmark, Spain, Sweden, and the United Kingdom). Including lower levels of care, (for example at the at the clinic/hospital level**), 20 of 24 surveyed countries use at least one tool broadly within their health system**. Most assessments of PSC occur in the hospital setting, surveying hospital staff on an ad-hoc basis. PSC measures are primarily used to inform internal learning and improvement, and are not commonly used for accountability purposes, though some countries serve as exceptions.

PSC measurement is a topical, and significant priority for OECD countries. Many countries see improving PSC as a key building block for improving patient safety and quality of care. A significant number of countries mention PSC as a key component of their national patient safety strategy (or similar document).**Over 75% of surveyed countries (18 of 23) indicated that there were plans in their country to initiate or expand existing work on PSC**. Overall, measurement of PSC is prevalent across OECD countries, though the application, purpose, and tools vary across countries.

PSC measurement is best integrated into a broader policy framework and its results should be made available and visible to relevant actors. In many health care systems, PSC tools will form part of a larger set of measurement indicators that include traditional patient safety indicators as well as patient-reported outcomes. International learning and benchmarking has significant potential for better understanding and improvement of patient safety and health care quality.

Résumé

Alors que la qualité de soins de santé s'améliore dans la plupart des pays de l'OCDE, **la sécurité des patients demeure une priorité pour les décideurs politiques et les acteurs de santé**. Bien souvent, les patients sont affectés par des défauts de délivrance de soins qui ne sont pas sans conséquences. Selon les estimations de l'OCDE, près de 15% des dépenses liées aux hospitalisations sont imputables à la prise en charge des effets néfastes engendrés par les soins médicaux. Les décideurs politiques concentrent leurs efforts sur la réduction de risques, les systèmes de santé basés sur l'apprentissage et l'environnement de soins qui repose en partie sur des facteurs humains. **Pour appuyer ces efforts, une culture de sécurité des patients est essentielle**.

D'après le ressenti croissant des systèmes de santé, mesurer les défauts dans la prise en charge n'est pas suffisant. L'utilisation d'outils supplémentaires est nécessaire aux systèmes de santé pour évaluer leur capacité et leur aptitude à délivrer des soins de manière sure. Pour ces raisons, la culture de sécurité des patients (CSP) tend à être de plus en plus utilisée afin de mieux appréhender la présence ou l'absence d'environnements de soins sécurisés. **Un corpus croissant de recherche montre que la CSP est associée à un important nombre de résultats positifs, parmi lesquels une amélioration des résultats liés à l'état de santé, de l'expérience du patient, de la productivité organisationnelle ainsi que de la satisfaction du personnel**. Des informations significatives liées à la CSP peuvent guider les décideurs politiques, directeurs d'hôpitaux et le personnel à améliorer et renforcer la culture et les résultats liés à la sécurité des soins.

Les outils de mesure de la CSP ne cessent de se développer depuis plusieurs décennies et leur utilisation est désormais répandue. Ce rapport met en avant les résultats apportés par les pays membres de l'OCDE à propos des plus récentes pratiques concernant la CSP. De nombreux pays ont rapporté l'utilisation de mesures de CSP au niveau de leur système de santé national (parmi lesquels l'Autriche, la Belgique, l'Islande, le Luxembourg, le Portugal, l'Espagne, la Suède et le Royaume-Uni) ou régional (parmi lesquels l'Australie, l'Autriche, le Canada, le Danemark, l'Espagne, la Suède et le Royaume-Uni). En incluant des niveaux hiérarchiques inférieurs de structure de soins (par exemple au niveau d'une clinique/d'un hôpital), **20 des 24 pays interrogés ont rapporté l'utilisation d'au moins un instrument de mesure de CSP dans leur système de santé**. À savoir que la plupart des évaluations de CSP sont pratiquées dans le milieu hospitalier, grâce à des enquêtes ponctuelles du personnel. Les mesures de CSP sont essentiellement utilisées dans le but d'informer sur l'apprentissage et l'amélioration interne et ne sont que très peu utilisées à des fins de responsabilisation, bien que certains pays montrent le contraire.

L'évaluation de la CSP est ancrée dans les priorités actuelles et traduit une importance majeure pour les pays de l'OCDE. Nombre d'entre eux considèrent l'amélioration de la CSP comme étant une des clés pour atteindre une meilleure sécurité et qualité des soins. En effet, un nombre significatif de pays a mentionné la CSP comme étant une composante importante de leur stratégie nationale de sécurité des patients. **Plus de 75% des pays interrogés (18 sur 23) ont indiqué que des plans d'initiation ou d'extension de projets sur la CSP étaient en cours.** De manière générale, l'évaluation de la CSP est une pratique répandue au sein des pays de l'OCDE bien que l'application, le but et les outils varient d'un pays à l'autre.

L'évaluation de la CSP gagnerait à être intégrée dans un cadre politique plus large. De plus, ses résultats se doivent d'être disponibles et visibles par les acteurs concernés. Dans de nombreux systèmes de santé, les instruments de CSP feront partie d'un plus large ensemble d'indicateurs de mesure existant qui incluent des indicateurs classiques de sécurité du patient ainsi que des données rapportées par les patients (patient-reported outcomes). Enfin, l'apprentissage et le benchmarking à l'échelle internationale possèdent un réel potentiel pour favoriser une meilleure compréhension et une amélioration de la sécurité des patients et de la qualité des soins.

Acronyms

ACI	Accreditation Canada International
ACSQHC	Australia Commission on Safety and Quality in Healthcare
AHRQ	US Agency for Healthcare Research and Quality
CPSI	Canadian Patient Safety Institute
CQC	Care Quality Commission (NHS England)
HAS	Haute Autorité de Santé (France)
HCQO	(Working Party on) Health Care Quality and Outcomes
HSPSC	Hospital Survey on Patient Safety Culture (also referred to as HSOPS, HSPOSC, SOPS, and Survey on Patient Safety Culture)
JCI	Joint Commission International
MaPSaF	Manchester Patient Safety Assessment Framework
MOSPS	Medical Office Survey on Patient Safety Culture
MSSSI	Ministry of Health, Social Services and Equality (Spain)
NIAZ	Nederlands Instituut voor Accreditatie Ziekenhuizen
NHS	National Health System (England, Spain, Northern Ireland)
NSQHS	National Safety and Quality Health Service (Australia)
PSC	Patient Safety Culture
PSI	Patient Safety Indicator
ROP	Required Organisational Practices (Accreditation Canada)
SAQ	Safety Attitudes Questionnaire
TUKU	Nordic Patient Safety Culture Questionnaire

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1. PSC in the context of improving patient safety

1.1. What is PSC?

1. Improving patient safety is a common objective for policy makers, health care managers and those delivering care. Traditional assessments of patient safety have focused on the quantity and severity of patient harms, such as medically acquired infections or adverse drug events. However, growing sentiment across systems is that measuring what goes wrong in health care is not enough. Health care systems require measures that assess their capacity and ability to deliver safe care. This is why measures of safety culture have been increasingly used to understand the presence or absence of safe organisational environments. Instead of attributing blame for failures to individuals, many health systems now focus on improving the systemic and organisational characteristics that are necessary for ensuring patient safety. Policy makers are moving their focus to risk mitigation, learning-based health systems, and health care environment design that takes human factors into account. A culture of patient safety is a fundamental component of these efforts.

2. The term safety culture has been used across high risk industries, including aviation, energy, and health care. The concept came into prominence in the aftermath of the Chernobyl nuclear disaster in 1986, where major safety culture deficiencies were identified as the root cause for the accident (International Nuclear Safety Advisory Group, 1986[1]). While there is not an internationally agreed upon definition, safety culture aims to describe the tacit and unwritten rules that seem to guide the actions of groups of people within an organisational setting (OECD, 2020[2]). A common definition characterizes safety culture as “the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organization's health and safety management” (Health and Safety Commission Advisory Committee on the Safety of Nuclear Installations, 1993[3]).

3. A strong patient safety culture (PSC) is an essential component of safer health care systems. Positive PSC is characterized by a ‘collective mindfulness’ about patient safety issues, mutual trust among staff, shared responsibility for safe care delivery as well as confidence in organisational-level safety initiatives (The Health Foundation, 2011[4]). Developing a strong PSC means creating a collaborative, safe environment, where performance improvement and patient safety is a shared value and a common goal. Safety culture also relates to the way safety issues are dealt with in health care organisations, for example, how medical errors are communicated or the way interactions between employees or across organisational hierarchies take place.

4. Countries have developed different strategies and initiatives to improve patient safety and the culture associated with it. There are now a range of widely used measurement instruments to assess PSC in health care settings. These instruments can provide health care workers with information on the state of PSC, detect deficiencies, increase awareness, and track changes as well as improvements over time.

Box 1.1. Key terms and definitions

Patient safety culture as defined by the European Society for Quality in Healthcare, is a pattern of individual and organisational behaviour, based upon shared beliefs and values that continuously seeks to minimise patient harm, which may result from the process of care delivery (Kristensen and Bartels, 2010[5]).

Patient safety climate is a context-dependent surface manifestation of PSC. It can be understood as shared perceptions and attitudes of individuals about patient safety within health care organisations (Kristensen and Bartels, 2010[5]).

A **patient** is a person receiving medical care, which includes treatment, intervention, procedure and diagnostic tests, as well as the continued monitoring of health, and signs as well as symptoms of disease over time. The term patient also encompasses the person's family, carer(s) or other surrogates who would be involved in, and affected by the effects of the patient's care (Slawomirski, Auraaen and Klazinga, 2018[6]).

Patient safety is the reduction of risk of unnecessary harm associated with health care to an acceptable minimum. An acceptable minimum refers to the collective notions of current knowledge, resources available and the context in which care was delivered and weighed against the risk of non-treatment or alternative treatment (WHO, 2018[7]).

Patient harm is any unintended and unnecessary harm resulting from, or contributed to, by health care. This includes the absence of indicated medical treatment. Patient harm is often caused by adverse events during care, which includes incidents of medication errors, incorrect or delayed diagnosis as well as health care-associated infections (Slawomirski, Auraaen and Klazinga, 2018[6]).

An **instrument or tool,** in the context of this report, is a qualitative or quantitative method to collect information about PSC. The instrument can on its own or as part of an initiative help to evaluate, promote and/or develop PSC (Kristensen and Bartels, 2010[8]). **PSC measurement** applies instruments or tools to collect information about PSC from various sources and is often used for learning and/or accountability purposes.

Clinical risk management is the process of improving the quality and safety of health care services by identifying the circumstances and opportunities that put patients at risk of harm and then acting to prevent or control those risks (WHO, n.d.[9]).

This report discusses the implementation of PSC surveys at several levels of the health system. For the purpose of this report an **organisation** refers to a hospital or a network of hospitals. The terms **clinic, ward, cluster, or department,** are used interchangeably and refer to a sub-unit of a hospital, whether that be a single bed unit or multiple bed-unit.

1.2. The domains of PSC

5. Culture is similar to other abstract concepts, such as intelligence, in that it is commonly understood but difficult to define. The characteristics that constitute a positive PSC are complex, and there are numerous theoretical frameworks to describe and measure them.

6. A 2010 review of the PSC literature in the U.S. hospital setting identified seven domains related to PSC; leadership, teamwork, evidence-based, communication, learning, justness, and patient-centeredness (Sammer et al., 2010[10]). A second review, published in 2014, suggests slightly different elements, which include: management commitment to safety, safety systems, work pressure, communication, teamwork, leadership and non-punitive (or blame-free) approach (Waterson, 2014[11]).

Work from the Joint Commission evaluating the domains of PSC measures established its own set of major dimensions, identifying a smaller set of concepts—including leadership and management, group behaviours and relationships, communications, and quality of work life (Table 1.1).

Table 1.1. Common dimensions across PSC tools

Major Dimensions	Examples of Topic Areas: Worker Safety Culture Tools	Examples of Topic Areas: Patient Safety Culture Tools
Leadership and management	Leadership and management support for staff safety; degree of supervision, leadership hierarchy, policies and procedures	Perceptions of management; leadership and management support for patient safety; non-punitive response to errors, policies, and procedures; adequacy of training
Group behaviours and relationships	Workgroup relations, conflict vs. cooperation, social relations, co-worker trust, supportiveness	Teamwork within and across units; quality of handoffs and transitions
Communications	Openness of communication, formal and informal methods, conflict resolution approaches	Feedback and communication about error; reporting mechanisms
Quality of work life: structural attributes; working conditions	Staffing adequacy, job satisfaction, team satisfaction, security; work pressure, rewards, job security, forced overtime, benefits	Staffing adequacy, job satisfaction, team satisfaction; resource availability; stress recognition

Source: (The Joint Commission, 2012[12]).

7. While the field has not yet coalesced on an agreed upon a standard set of domains to define PSC, it is clear that key issues of clinical risk management, leadership, communications, and teamwork—as well as organisational structural attributes—are key factors in determining the PSC of health care settings.

1.3. Safety culture and safety climate are distinct concepts

8. The notions of culture and climate are often used interchangeably in literature on patient safety, however climate can be considered a particular local and changing expression of PSC (Itoh, Boje Andersen and Lyngby Mikkelsen, 2014[13]). The notion of culture in relation to patient safety captures a broad and rather steady phenomenon, encompassing the underlying values that shape behavioural patterns and processes. Patient safety climate, however, is a more volatile (but also concrete) measure indicative of the broader safety culture. Climate is the measurable aspect of culture.

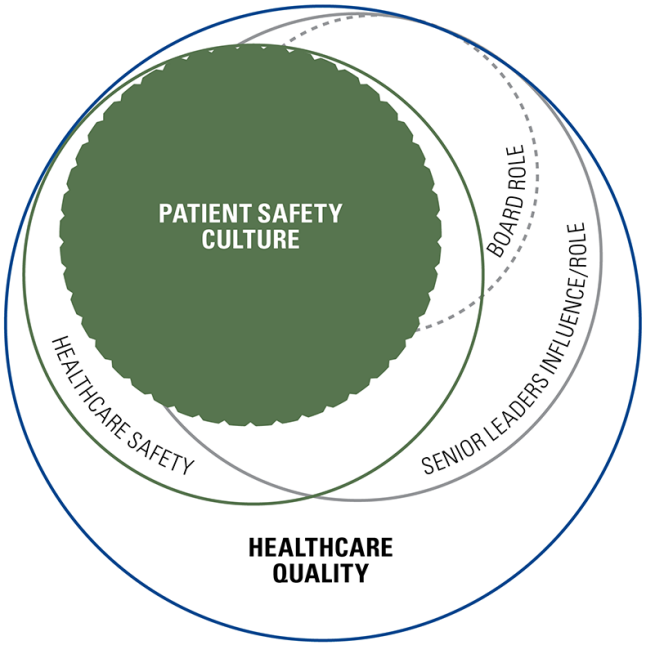
9. While patient safety climate may be easier to quantify and measure than PSC, policy efforts should lastly be aimed at positively transforming the broader safety culture, and therefore improving the organisational patterns and normative foundations conducive to patient safety. For the purposes of this report, the terms will be used interchangeably.

1.4. Management and leadership have a key role in establishing a positive PSC

10. Commitment to PSC on the part of leadership and management is crucial to establishing and maintaining a safe environment and producing high quality health care services (see Figure 1.1). While errors leading to patient harm appear at the operational level, underlying organisational factors play a vital role in ensuring safety, and are under the influence of management and leadership (Flin and Yule, 2004[14]). Leaders play a key role in driving the safety culture of an organisation by setting examples, fostering communication, creating enabling atmospheres for raising concerns, as well as leveraging rewards and punishments (Waterson, 2014[11]) (OECD, 2020[2]). Initiatives to improve PSC often involve health care institutions as a whole and in order to coherently and successfully implement them. As such, management needs to cooperate across different organisational levels, as well as with external stakeholders, such as

regulators (OECD, 2020[2]). It is important to understand the perspective and needs of all parties involved in efforts for better safety and quality of care, and to gain the support and commitment of everyone within the organisation (McFadden, Henagan and Gowen, 2009[15]).

Figure 1.1. Key relationships related to quality, patient safety and leadership

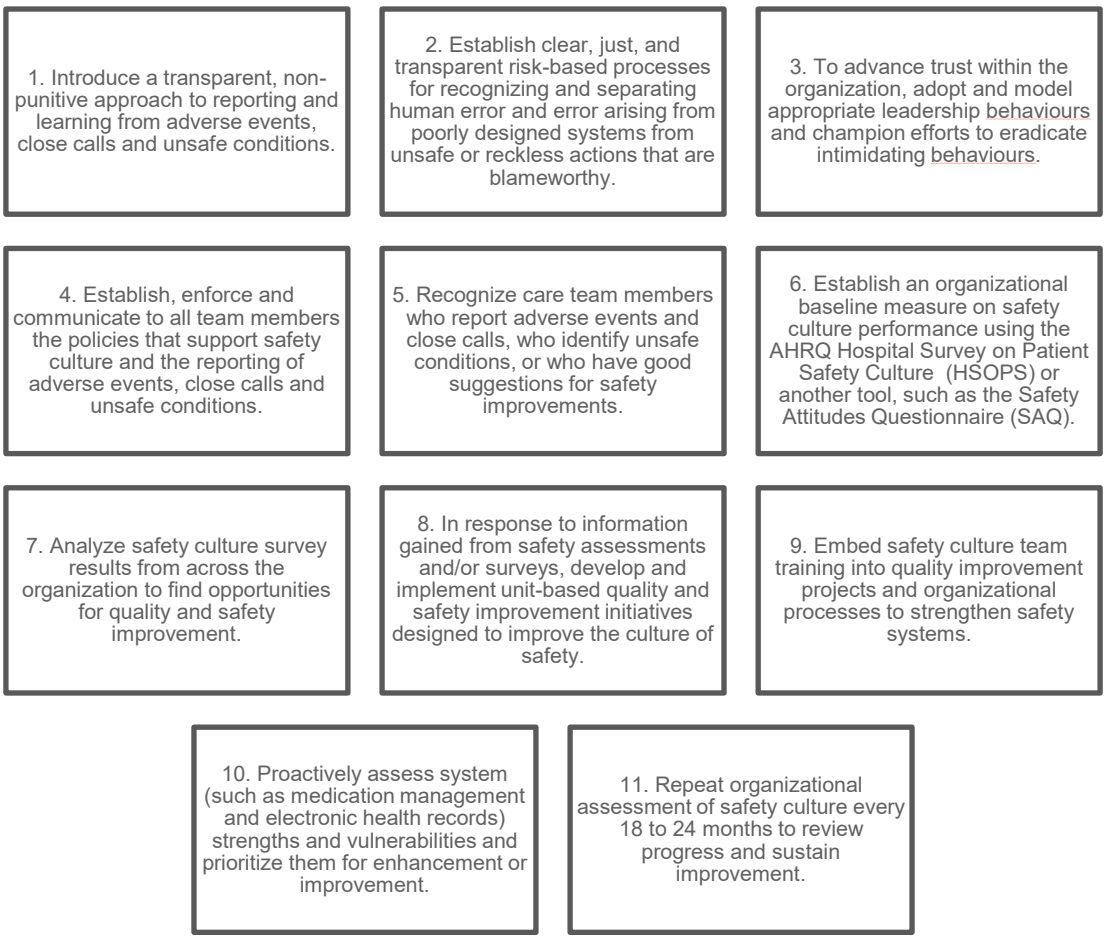


Source: (Armutlu et al., 2020[16])

11. Health care leaders can act as catalysts for improving PSC and implementing policies to improve clinical risk management, but they sometimes lack the knowledge and skills to do so. It has been shown that leaders tend to have more positive perceptions of PSC than frontline staff (Singer et al., 2008[17]), and the bigger this mismatch, the more errors are made on the operational level (Firth-Cozens and Mowbray, 2001[18]). These findings are consistent with studies of safety culture in other sectors. For example, research from the hydrocarbon sector finds a similar lack of alignment between perceptions of safety between leadership and frontline staff (OECD, 2019[19]). Given that the level proximal authority has an impact on the uptake of safety culture enablers, a number of interventions have targeted mid-level leadership in an effort to improve PSC. An example from a Danish psychiatric facility showed that a multicomponent training of clinical area level leaders had a remarkable effect on PSC as reported by staff (Kristensen et al., 2016[20]). This points to the great potential of interventions on a leadership level, but also to the need for instruments that deliver reliable information about the state of PSC in specific health care units. Inadequate management has been found to contribute to adverse events, for example by insufficient support for error reporting, a lack of response to staff that reports safety vulnerabilities or leaving staff burnout unaddressed (Sfantou et al., 2017[21]).

12. The Joint Commission recommends that health care leaders proactively improve PSC with a number of concrete leadership actions, as is illustrated below (The Joint Commission, 2017[22]).

Figure 1.2. Leadership actions to improve safety culture



Source: (The Joint Commission, 2017[23])

1.5. The OECD patient safety measurement landscape

13. While health care quality is improving across many OECD members countries, patient safety remains a high priority on the measurement agenda. Failing to provide safe care to patients is a system failure. To strengthen health systems' ability to deliver safer care to patients, health systems need to know how they are performing on patient safety in order to appropriately identify where improvements can be made.

14. Since 2006, OECD's Health Care Quality and Outcome (HCQO) Working Party (WP) has developed patient safety indicators (PSIs) based on administrative data sources and these data have been regularly collected and reported with an aim of assessing and comparing cross-country differences in patient safety. Currently, OECD collects information on numerous important safety indicators, including postoperative complications and obstetric trauma in acute care (derived from hospital administrative data), prescribing safety in primary care (derived from national prescribing databases) and health care acquired infections and pressure ulcers in LTC (derived from international point prevalence studies).

Table 1.2. Existing OECD patient safety indicators

Hospital Care Patient Safety Indicators	Primary Care Safe Prescribing Indicators	Long-Term Care Safety Indicators
-Retained surgical item or unretrieved device fragment -Postoperative pulmonary embolism – hip and knee replacement discharges - Postoperative DVT – hip and knee replacement discharges -Postoperative sepsis - abdominal discharges -Postoperative wound dehiscence – abdominal discharges -Obstetric trauma vaginal delivery with instrument -Obstetric trauma vaginal delivery without instrument -Health care associated infections	- Adequate use of cholesterol lowering treatment in people with diabetes - First choice antihypertensives for people with diabetes - Long-term use of benzodiazepines and benzodiazepine related drugs by the elderly - Use of long-acting benzodiazepines in older people - Overall volume of antibiotics for systemic use prescribed - Volume of cephalosporines and quinolones as a proportion of all systemic antibiotics prescribed - Use of anticoagulating drug in combination with an oral NSAID - Polypharmacy rates amongst the older people - Overall volume of opioids prescribed - Proportion of the population who are chronic opioid users - Proportion of older population prescribed with antipsychotics	- Pressure ulcer prevalence - Health care associated infections

Source: OECD.stat.

15. A complete picture of patient safety requires a variety of types of measures, including established measures, such as patient safety indicators, health outcomes indicators, as well as measures of PSC and patient-reported safety indicators.

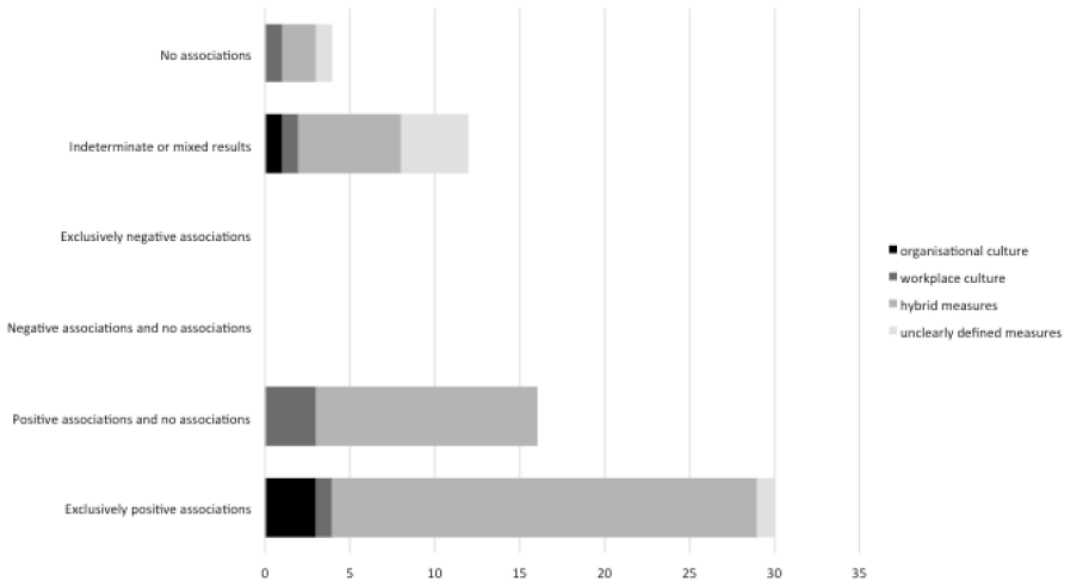
1.6. PSC in relation to health outcomes

16. The human costs of poor safety are well-known as a major source of preventable morbidity and mortality. Research analysing data from the UK, Canada, and the Netherlands suggests that between 4-5% hospital deaths could be considered as 'avoidable' (Hogan et al., 2015[24]). Using this research, the NHS estimates that up to 11,000 lives a year may be lost in England due to inadequate patient safety processes (NHS England and NHS Improvement, 2019[25]). Poor safety comes at a price in health care. OECD estimates suggest that up to 15% of in-patient health spending is attributable to harm that occurs during the course of hospital care (Slawomirski, Auraaen and Klazinga, 2018[6]).

17. The research base connecting PSC and health outcomes is growing, and there are a number of examples demonstrating the enhancement of PSC and its correlation with improved health outcomes. For example, a study of over 150 hospitals in the United States found that safety culture was significantly correlated with reduced in-hospital complications and adverse events (Mardon et al., 2010[26]). A study of 44 Neonatal Intensive Care Units (NICUs) in the United States showed that good safety and teamwork cultures were associated with lower levels of hospital-acquired infections (Profit et al., 2018[27]). Further research has examined the relationship between PSC and surgical outcomes, reporting that higher percentages of positive safety attitudes questionnaire responses were significantly associated with lower risk of postoperative morbidity and death or serious morbidity (Odell et al., 2019[28]). A state-wide effort in the United States demonstrated that efforts could be taken in the clinical environment to dually improve PSC and clinical outcomes—finding that improvements on staff assessments of "teamwork" were associated with increased adherence to best practices related to the care of ventilated patients (Goeschel and Pronovost, 2008[29]).

18. Enough evidence has now been generated to inform reviews on the subject. A study in the British Medical Journal analysed over 60 studies examining the relationship between organisational and workplace cultures, and patient outcomes, finding that over 70% of studies reported exclusively positive associations (48.4%), or a mixture of positive associations and no associations (25.8%), between culture and patient outcomes (see Figure 1.3) (Braithwaite et al., 2017[30]).

Figure 1.3. Categorisation of direction of 60 studies linking organisational and workplace cultures to patient outcomes



19. *Source*: (Braithwaite et al., 2017[30]).

20. Another review from the Health Foundation assessed linkages between patient outcomes and safety culture, finding positive linkages with good safety culture and reduced readmissions, length of stay, and medication errors. The study found mixed results relating to complication rates, adverse events composites, and a positive indirect link with reduced medication errors (see Table 1.3). (Health Foundation, 2011[31]).

Table 1.3. Review of findings on the link between safety culture and patient outcomes

	Studies	Key Findings	Relationship
Readmissions	• 3 cross-sectional correlation studies from the USA, Canada and Israel • 1 before and after study from the USA	Poor safety climate was associated with increased readmissions for heart attacks and heart failure	Positive link
Length of stay	• 1 cross-sectional correlation study from the USA	Reductions in safety climate were associated with increased length of stay	Positive link
Mortality	• 1 cross-sectional correlation study from the USA	Safety climate was not associated with mortality in surgery patients	No link
Complications	• 3 before and after studies from the USA • 1 cross-sectional correlation study from the Netherlands	Improved safety climate was associated with reduced surgical complications in one study but not another. There was no link between safety climate and pressure ulcer rates	Mixed findings
Medication errors	• 2 cross-sectional correlation studies from the USA	the USA Safety climate influenced medication errors and the impact of safety initiatives on medication errors	Positive indirect link
Composite adverse events	• 3 cross-sectional correlation studies from the USA and Canada • 4 before and after studies from the USA	Better safety climate was associated with fewer adverse events or less serious adverse events, but there were conflicting findings. Safety initiatives simultaneously improved safety climate and patient outcomes	Mixed findings
Improved processes and generic outcomes	• 1 before and after study from the UK • 2 cross-sectional correlation studies from the UK and USA	Safety improvement initiatives were associated with enhanced processes, outcomes and safety climate, but safety climate improvements happened simultaneously rather than necessarily causing positive change	Indirect link

Source: (Health Foundation, 2011[31]).

21. It is important to note that some of the research delineating the effects of safety culture and patient outcomes has found mixed results. For example, while the study mentioned above on safety culture in NICUs did find that safety culture was significantly correlated with reduced hospital acquired infections, other quality metrics, such as antenatal corticosteroids, hypothermia, pneumothorax, chronic lung disease, growth velocity, and mortality were not correlated (Profit et al., 2018[27]).

1.7. Impact of PSC on patient experience of care

22. The PSC of health care institutions can have an impact on how patients experience their health care. As with health outcomes, there is a growing body of literature demonstrating the empirical relationship between PSC and patients' experiences of care in the health care system. Research from the United States shows that hospitals with higher scores on measures of PSC reported by health care staff also showed more positive measures of patient experience (Sorra et al., 2012[32]). In particular, a strong positive relationship was found between hospital performance on two Hospital Survey on Patient Safety Culture (HSPSC) domains ('organisational learning – continuous improvement' and 'teamwork within units') and patient experience of care. More recent research found a significant positive correlation between results of the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and the HSPSC survey, finding that the achievement of a positive patient experience was most significantly linked to three safety culture domains: teamwork, adequate staffing, and organisational learning (Abrahamson et al., 2016[33]).

23. Positive patient experiences and PSC are mutually reinforcing. For instance, researchers point to the positive effects of better provider-patient communication on patient adherence to treatment and medication regimens as well as greater use of preventive health services (Price et al., 2014[34]). Studies reviewed by Price et al. consistently indicate that positive patient-reported experiences of care are linked to a range of improvements in patient outcomes, reduced health care utilization, and better safety culture within hospitals (2014[34]).

24. PSC has also been linked to other measures of patient satisfaction. A study from the United States found a significant and positive relationship between teamwork culture and patient satisfaction (Meterko, Mohr and Young, 2004[35]). In another study by Lyu and colleagues, however, patient satisfaction shows to be unrelated to hospital's overall PSC score. They still found a significant association between patient satisfaction and PSC subdomains, such as teamwork and stress recognition (Lyu et al., 2013[36]).

1.8. Impacts of PSC on staff safety, behaviour and productivity

25. Fear of repercussions for reporting and discussing medical errors has been shown to differ between nurses and physicians, as well as across areas of care (Castel et al., 2015[37]). A study in 69 in-patient units in Israel finds that low patient safety climate scores as reported by nurses was predicting an increased likelihood of adverse events in their respective work units (Zohar et al., 2007[38]). Improvements in PSC may also correspond with improved the communication about medical errors to patients. A 2011 review found that on average, between 20-40% of medical errors were disclosed to affected patients. Doctors were found to be less likely to disclose errors where they were less likely be observed by patients, or when the adverse event caused by the error was serious (Quick, 2011[39]). The differences between perceptions of PSC between various types of hospital staff may also be addressed by ensuring that the right 'messengers' are identified to promote PSC concepts. Analysis from other sectors has found that identifying mid-level leadership as messengers can be particularly impactful, specifically individuals who have more authority than the target group but still remain close to the operational work or who are socially engaged with the target group (OECD, 2020[2])

26. PSC is further related to improvements in employee adherence to safety practices. In a large US hospital, for example, improved safety culture was associated with better hand hygiene (Daugherty et al.,

2012[40]). A review by the Health Foundation reports about a range of studies that find evidence of an overall positive relationship between PSC and safety behaviour of staff, including error reporting (see Table 1.4) (The Health Foundation, 2011[41]). Furthermore, aspects of safety culture, and particularly the acknowledgement of human errors as well as small power distances among employees has been shown to be critical for reporting practices (Itoh et al., 2002[42]). In patient-centred health care systems with strong safety cultures, better provider-patient communication throughout the care process may help further reduce errors (Vincent and Coulter, 2002[43]). In a recent publication, the OECD has pointed to the importance of a 'just culture' for safety reporting that focuses on organisational learning and improvement instead of on blaming and shaming individuals (OECD, 2018[44]).

Table 1.4. Review of findings on the link between safety culture and staff outcomes and behaviour

Outcome	Studies	Key Finding	Relationship
Safety behaviours	• 1 before and after study from the USA • 3 cross-sectional correlation studies from China, the Netherlands and USA	Safety culture impacted on staff safety behaviours, but the link may not be straightforward. Positive safety culture may inhibit as well as motivate safety behaviours	Positive link
Error reporting	• 2 cross-sectional correlation studies from Hungary and Lebanon • 1 before and after study from Korea	Positive safety culture was associated with increased willingness among staff to report errors, but there were complexities	Mixed findings

Source: (Health Foundation, 2011[31]).

27. PSC and a healthy workplace for staff are closely intertwined—safer health care also implies safer workplaces for staff. As Eisenberg et al. have stated, "The physical and emotional health of workers fosters quality care, and vice versa, being able to deliver high-quality care fosters worker health" (Eisenberg, Bowman and Foster, 2001[45]). It has been found that medical facilities with positive perceptions of health care workplace safety by staff also tend to have high PSC scores (Mohr et al., 2018[46]). Creating a good work environment for health care employees and improving patients' quality and safety of care are mutually reinforcing efforts.

28. Studies show the empirical relationship between PSC and staff injuries. Low safety climate scores were associated with increased risks of work-related injuries in a study of hospitals in Costa Rica (Gimeno et al., 2005[47]). PSC was found to be significantly correlated with reduced occurrences of back injuries (Mark et al., 2007[48]) as well as needle-stick and sharp injuries of health care workers (Smith et al., 2010[49]). While most of these observations are correlational, a case study in a US hospital shows lower incidences of staff injuries in consequence of newly organized employee safety program, with a focus on improving PSC (Hooper and Charney, 2005[50]).

29. PSC is also linked to the psychological well-being of staff. Several studies have observed a correlation with employees' mental health, showing that higher risks of burnout among health care staff are associated with the perception of low levels of patient safety (Gershon et al., 2007[51]) (Halbesleben et al., 2008[52]) (Hall et al., 2016[53]). A recent cross-sectional survey study in the US found that a good work-life balance of health care employees correlates with better teamwork and safety climate (Sexton et al., 2017[54]).

30. Research suggests that improvements in perceptions of safety culture have a positive impact on job satisfaction and staff engagement. A study of hospitals in Canada shows that positive PSC is related to high levels of employee engagement, patient-centred care, and employees' positive assessment of the quality of care provided by their team (Lowe, 2012[55]). A recent study investigated the effect of a clinical

PSC initiative in the United States and found that it led to lower burnout rates as well as higher workforce engagement (Sexton et al., 2018[56]). Thorp et al. find a relationship in the US between PSC and decreased levels of workers' compensation claims (Thorp et al., 2012[57]). Additional evidence shows that better PSC may be connected to staff retention and lower turnover (The Health Foundation, 2011[41]).

31. Finally, studies from other sectors suggest that PSC may enhance productivity. A US study shows that companies that are characterized by strong cultures of employee health and safety often outperform the market at the same time (Fabius et al., 2013[58]). Poor safety conditions, however, have been found to detrimentally affect productivity and quality in a study of the manufacturing sector (Maudgalya, Genaidy and Shell, 2008[59]). An increase in health risks for employees were associated with a loss in self-reported productivity in a study of over 2000 US employees (Boles, Pelletier and Lynch, 2004[60]). In health care, an economic case can similarly be made for PSC as a way to achieve the long-term advantages of operational sustainability and quality of outcomes. Fostering a culture of patient safety is intimately linked to the healthy work environments that enable staff to consistently deliver high-quality and safe care services.

1.9. Chapter Conclusions

32. While health care quality is improving across many OECD members countries, **patient safety remains a central policy concern**. Policy makers are moving their focus to risk mitigation, learning-based health systems, and health care environment design that takes human factors into account. **A culture of patient safety is a fundamental component of these efforts.**

33. Policy makers, health care managers, and care providers are all increasingly recognising the importance of patient safety culture (PSC) in ensuring high-quality, safe health care. **A growing research body has found that PSC is associated with numerous outcomes, including improved health outcomes, improved patient experience, and may have impacts on organisational productivity and staff satisfaction,** as it does in other sectors. Strengthening PSC means ensuring an environment of trust and a shared responsibility for patient safety, as a common value and institutional goal. Understanding PSC using measurement—and combined with Patient Safety Indicators and other outcome and process measures—can provide a comprehensive view of the overall "health" of the health care system.

2. Measuring PSC

2.1. Growing popularity and use of PSC instruments

34. Measurement of PSC is important for health care leaders and policymakers because allows them to better understand patterns of individual and group behaviour, as well as underlying shared beliefs and values in respect to patient safety. This helps to make more 'accurate diagnoses' and to better identify problems and weaknesses in regard to patient safety (Flin, 2007[61]). Better knowledge about PSC informs policy interventions for health care improvement, and vice-versa, measurement activities can be helpful to evaluate the impact particular patient safety initiatives have had on the underlying PSC of health care organisations.

35. Measurement of PSC is understood to be a leading indicator of patient safety, in contrast to traditional PSIs, such as error and injury rates, which are considered lagging signs of performance. PSIs alone, without the complement of PSC measures, for assessing safety performance may be difficult to use for accountability purposes (as opposed to learning purposes). This is because PSIs, such as incidence rates, may be influenced by case-mix (e.g. the complexity of cases treated) or organisational culture (e.g. a strong reporting culture increases the reporting of near misses and adverse events).

36. While measurement is a critical starting point and component of safe, reliable health care, it is not an end in itself but a means for improvement. Not only does measuring PSC require time and effort from survey administrators and respondents, it also demands broader follow-up engagement in order to analyse the results and relate to every day practices and derive concrete conclusions. Even so, implementing PSC measurement tool can create awareness for and promote the importance of PSC—and dually demonstrate institutional support for safe practices. Safety measurement should be considered as part of a feedback loop, and thus contribute to organisational and individual learning and improvement (IHI, Salzburg Global Seminar, 2019[62]). Work from the OECD on safety culture in other sectors has found that feedback is an important mechanism for changing safety behaviour, finding that feedback can reduce mistakes and provide more visibility to the consequences of decisions (OECD, 2020[2]).

37. **Collecting information about PSC and follow up evaluation of the results is essential for learning, improvement, benchmarking, and comparison**. Crucially, measurement is not only beneficial for detecting safety deficiencies, but also for highlighting the relationship between the PSC and the clinical practices, evaluating settings with strong PSCs, where safe care is delivered consistently over time (OECD, 2018[44]). Recognizing the type of environment and the conditions conducive to good patient safety is pivotal for a proactive management approach to health care improvement.

38. Use of PSC instruments for measurement allows health care leaders to access information about PSC across organisational units and among a variety of professional groups. Information about PSC status can therefore guide prevention efforts in particular areas of care. Measurement tools can take a diversity of staff and organisational set-ups into account, which helps to draw custom-made conclusions and tailor patient safety initiatives to specific health care settings. Finally, PSC measurement activities can be used to empower health care staff of all levels, encouraging them to build a strong PSC within their immediate work teams.

39. Tools to measure PSC have proliferated in recent decades and are now in wide-spread use. A 2009 review identified 70 different tools in use for assessing organisational culture (Jung et al., 2009[63]).

A review by the European Union Network for Patient Safety in 2010 identified 19 tools specific to measuring PSC in use in EU member countries (Kristensen and Bartels, 2010[5]). For example, the Hospital Survey on Patient Safety Culture (HSPSC) is used in over 90 countries and has been translated into 40 languages (AHRQ, 2019[64])

40. Despite the popularity of measurement of PSC, the tools are relatively nascent. Beginning in the late 1990's several instruments were developed for use in the health care sector based on existing tools in other industries—from sectors including aviation, oil, and nuclear (Waterson, 2014[11]). The first widespread patient safety measurement tools began to appear in the early to mid-2000's, including the now broadly used HSPSC and SAQ (Waterson, 2014[11]). The majority of measurements are targeting the hospital setting, while measurement of primary / ambulatory care as well as long-term care is not yet very common. The relative newness of PSC measures, combined with their heterogeneous nature and broad use creates unique challenges.

2.2. Commonly used tools to measure PSC

41. Previous work from the European Union Network for Patient Safety identified three tools that are most frequently applied to assess aspects of PSC in EU member states: the HSPSC developed by the Agency for Healthcare Research and Quality (AHRQ), the Manchester Safety Framework (MaPSaF) and the Safety Attitudes Questionnaire (SAQ) (Kristensen and Bartels, 2010[8]). These tools are openly available, have been translated into many languages and adapted for use in various countries. A large variety of other tools exists, but many of them are much less commonly used.

2.2.1. Hospital Survey on Patient Safety Culture

42. In 2004, AHRQ developed a set of surveys for the assessment of PSC in hospitals, primary care, nursing homes, community pharmacies and ambulatory surgery centres (AHRQ, 2019[65]). The main tool used in the United States is the HSPSC. The HSPSC focuses on patient safety issues and on error and event reporting. It is aimed at the hospital setting and poses questions to employees about PSC at all levels. It is available on the AHRQ website, and comprises additional resources such as a user's guide, access to a comparative database for US facilities as well as a data entry and analysis tool. The survey measures 12 safety culture dimensions and 42 items and takes approximately 15 minutes to complete. Additionally, it includes two outcome indicators, for which respondents are asked to provide a grade (5 response options, A for Excellent- E for Failing) for overall patient safety in their unit as well as the number of events they have reported in the last 12 months.

43. Among the strengths of the HSPSC tool are that it allows for large-scale comparisons as well as the identification of changes over time. The survey has been applied extensively to medical facilities in the United States and beyond, and has also been translated and adapted to many other national health care contexts (Hammer and Manser, 2017[66]). An analysis of the HSPSC found that the tool was psychometrically sound at the individual, unit, and hospital levels and demonstrated high levels of reliability and validity (Sorra and Dyer, 2010[67]). Another publication only partially confirmed the tool's validity and suggested that further study is needed (Blegen et al., 2009[68]). A study of 62 international studies using the HSPSC found that over half of the studies had low reliability (below .7) for at least six of the tools dimensions (Waterson et al., 2019[69]).

2.2.2. Safety Attitudes Questionnaire

44. The Safety Attitudes Questionnaire (SAQ) originates from the University of Texas in cooperation with John Hopkins University (Sexton et al., 2006[70]). The tool's aim is to give a snapshot of the safety culture of health care facilities through surveying frontline worker's perceptions and attitudes. The full version of the SAQ includes 60 items, of which 30 are standard and identical across all health care settings (Hogden et al., 2017[71]). However, this version of the tool is now no longer recommended for use as it has

been found to be less reliable and valid than the short form (Eric Thomas, Personal Communication). The generic one-page version of the survey includes 36 items across six dimensions (see Table 2.6), and takes approximately 10 minutes to complete. Questions are answered using a five-point Likert scale. The SAQ as well as brief supplementary instructions about scoring are openly available on the website of the Center for Healthcare Quality and Safety at the University of Texas (University of Texas, 2019[72]). The SAQ and HSPSC have several overlapping domains (see Table 2.2).

45. The SAQ is quick to complete and useful to compare the attitudes of different types of staff, to monitor changes over time and to benchmark health care institutions. It has been widely used in different health care contexts and translated to many different languages (The Health Foundation, 2011[73]). The survey has been applied extensively across health care settings such as intensive care units and hospitals, as well as in primary and ambulatory care. The SAQ is also the basis for a number of other tools that measure PSC. It is considered to be among the most rigorously validated tools for measuring PSC, even despite some debate about the construct validity of the 'stress recognition' subscale (Hogden et al., 2017[71]). Importantly, higher scores on the SAQ survey have been directly associated with positive patient outcomes (The Health Foundation, 2011[73]). Disadvantages are that the questionnaire can identify differences in the perception of safety culture between different occupational groups, but does not explain why these differences exist or how they can be alleviated, only qualitative follow up dialogue can shed light upon this.

2.2.3. Manchester Patient Safety Framework

46. The Manchester Patient Safety Framework (MaPSaF) has been developed by the University of Manchester in the United Kingdom in 2006 (The Health Foundation, 2013[74]). The MaPSaF is a qualitative assessment tool implemented by means of a process of reflection and discussion in a workshop-based format. The tool has four different versions, covering acute, ambulatory, primary and mental health care facilities. It includes extra resources such as presentation template about MaPSaF and an evaluation guidance. Led by a coordinator from the respective health care organisation, staff rate their team and their organisation across 10 safety culture dimensions on a 5-level scale of organisational maturity rating.

47. The MaPSaF tool can help teams to reflect on current PSC, understand how PSC could be improved, show differences in perception among staff, and discuss the benefits of particular safety interventions. It measures culture in a very comprehensive way and relies on the involvement of staff, which can effectively reveal areas for improvement, but also makes the tool difficult to use for accreditation processes (Hogden et al., 2017[71]). The framework has explicitly been developed to be a tool for reflection, and not for benchmarking (Kristensen and Bartels, 2010[8]). Furthermore, little has been published about the use of the framework; and only in a few cases it has been applied outside of the United Kingdom (The Health Foundation, 2011[73]). As of 2017, the MaPSaF tool has been archived (The National Archives, 2017[75]).

2.2.4. Additional PSC measurement tools

48. Some newer tools are based on further developments of pre-existing surveys, for example the Safety Climate SCORE tool from 2014. It is based on an updated version of the SAQ and consists of 48 items, most of which use a five-point Likert scale ('Disagree Strongly' to 'Agree Strongly'). From the research that has been undertaken on SCORE so far, the survey appears to have good reliability (Hogden et al., 2017[71]). The tool is available for purchase (Safe & Reliable Healthcare, 2019[76]).

49. Another notable example is the Canadian patient climate survey (Can-PSCS), which is used as part of accreditation processes in the Canadian health system. It measures patient safety climate with 21 items in six dimensions and includes two extra questions to rate patient safety. The initial survey design rests on previous work done by Singer and colleagues, (Singer et al., 2003[77]), Hofmann and Mark (Hofmann and Mark, 2006[78]) as well as AHRQ. The Can-PSCS has been validated for different care

settings and is recommended for a regionalised, publicly funded health care system (Ginsburg et al., 2014[79]).

2.3. Mapping across common tools

50. Many of the most commonly used tools capture similar domains of PSC. A full list of domains, intended sample, and other characteristics of common surveys is found in Table 2.1.

Table 2.1. Dimensions of common PSC instruments

	HSPSC	SAQ*	MaPSaF*
Domains	1. Teamwork within units 2. Supervisor/manager expectations and actions promoting safety 3.. organisational learning – continuous improvement 4. Management support for patient safety 5. Overall perceptions of patient safety 6. Feedback and communication about error 7. Communication openness 8. Frequency of events reported 9. Teamwork across units 10. Staffing 11. Handoffs and transitions 12. Non-punitive response to errors	1. Teamwork Climate 2. Safety Climate 3. Stress Recognition 4. Job Satisfaction 5. Perceptions of Management 6. Work Conditions	1. Commitment to overall continuous improvement 2. Priority given to safety 3. System errors and individual responsibility 4. Recording incidents and best practice 5. Evaluating incidents and best practice 6. Learning and effecting change 7. Communication about safety issues 8. Personnel management and safety issues 9. Staff training and education 10. Team working
Intended Sample Population	All hospital personnel; especially suited for staff with patient contact	All hospital personnel	Health care staff
Number of Items and Nature	42 closed items; Likert Scales	36 closed items, 5-point Likert Scale	10 dimensions on a 5-point scale; qualitative (from 'pathological' to 'generative')
Languages**	English, Spanish, Norwegian, Arabic, Turkish, Dutch, French, Farsi	English, German, Swedish, Norwegian, Chinese, Turkish, Dutch, Portuguese, Arabic, Danish	English

Note: *Assessment according to the instrument applicable in hospital settings.
**This list is not exhaustive
Source: (Kristensen and Bartels, 2010[5]) (Singla et al., 2006[80]) (Waterson, 2014[11]) (Hogden et al., 2017[71]) (The Health Foundation, 2011[73]) (Kristensen validation)

51. Some research has been conducted to assess possibility of mapping between the SAQ and HSPSC—the two most common surveys. Researchers have been able to statistically convert scores from the HSPSC to the SAQ safety and teamwork dimensions (see Table 2.2), but note that the conversion may not be very reliable due to differences in the content between the surveys, resulting in unexplained variance the regression models. (Etchegaray and Thomas, 2012[81]).

52. Further research might examine methods to map the SAQ and HSCPC tool to common outcomes, however, based on the existing literature, this approach does not seem very promising due to differences in the domains and contents of the two surveys—with authors noting, "Future research might find ways to convert scores, but our initial impression is that the surveys cannot be converted" (Etchegaray and Thomas, 2012[81]).

Table 2.2. Corresponding items between HSPSC and SAQ on safety and teamwork

HSPSC Factor	HSPSC Items	SAQ Factor	SAQ Items
Organisational learning/ continuous improvement	We are actively doing things to improve patient safety Mistakes have led to positive changes here After we make changes to improve patient safety, we evaluate their effectiveness	Safety	I would feel safe being treated here as a patient Medical errors are handled appropriately in this clinical area I know the proper channels to direct questions regarding patient safety in this clinical area I receive appropriate feedback about my performance In this clinical area, it is difficult to discuss errors I am encouraged by my colleagues to report any patient safety concerns I may have. The culture in this clinical area makes it easy to learn from the errors of others
Teamwork within hospital units	People support one another in this unit When a lot of work needs to be done quickly, we work together as a team to get the work done In this unit, people treat each other with respect When one area in this unit gets really busy, others help out	Teamwork	Nurse input is well received in this clinical area In this clinical area, it is difficult to speak up if I perceive a problem with patient care Disagreements in this clinical area are resolved appropriately (i.e., not who is right, but what is best for the patient) I have the support I need from other personnel to care for patients It is easy for personnel here to ask questions when there is something that they do not understand The physicians and nurses here work together as a well-coordinated team
Communication openness	Staff will freely speak up if they see something that may negatively affect patient care Staff feel free to question the decisions or actions of those with more authority Staff are afraid to ask questions when something does not seem right		

Source: (Etchegaray and Thomas, 2012[81])

2.4. Challenges for PSC measurement

53. Although survey tools to measure PSC are widespread, issues of reliability and validity remain. Concerns have been raised that the enthusiasm for using PSC may be outpacing the development of appropriate tools. Many hospitals and health care organisations have created and adapted their own tools without consideration of key survey design aspects—such as the counterbalance of positive and negative statements, or may draw inferences based on data informed by poor sampling practices (Waterson, 2014[11]).

54. Sufficiently high response rate are critical, for example, since survey results will represent opinions rather than general culture if they fall below 60% (Pronovost and Sexton, 2005[82]). Response rates are also likely to be influenced by the complexity and length of a questionnaire.

55. Existing tools vary in terms of their domains, definitions, and methods. A review of 13 PSC instruments found that evaluated tools had an average of 51 questions, ranging from 10-112 (Singla et al., 2006[80]). More specifically, this study found that tools varied widely in which domains of patient safety they covered, ranging between 4 and 19 dimensions per tool. A similar review of nine patient safety climate surveys found variation in the quantity and quality of psychometric testing used during survey development (Colla, Bracken and Kinney, 2005[83]). Moreover, most of these tools are being used in organisational settings for internal benchmarking, potentially limiting their application for use for regional, national, or international comparisons.

56. Even for popular tools, concerns regarding the validity of findings remain. Research from Norway noted issues with the validity of HSPSC when analysing it against the Global Trigger Tool (GTT) and

warned against it being used, on its own, as an indicator of "true" safety in health care settings (Farup, 2015[84]). The 2011 review from the Health Foundation noted that overall, there is a lack of evidence about the strengths and weaknesses of various PSC tools and about the implications of using them in different contexts. They note that they are unable to conclude that the tools are not valid, or ineffective, but that more research is required to understand the properties of each tool—and in what settings each tool is most useful (The Health Foundation, 2011[4]). More research and shared learning is required in this dynamic and growing filed. In particular, it appears there are opportunities for developing and sharing methodological standards and best practices.

57. Other concerns relate to the interpretation of variation in performance on PSC and how to understand the **underlying sources** of these differences (Pronovost and Sexton, 2005[85]). The lack of understanding of the behavioural drivers of PSC by health care leadership may hinder effective culture change. Previous work from the OECD has examined the overlay of psychological principles in relation to organisational culture, noting for example, the importance of goal setting and the limitations of incentives and rewards on work motivation (OECD, 2020[2]). Analysis from the OECD has discussed the cyclical nature of behaviour change and safety culture, noting that safety culture is influenced by safety standards, protocols and other systems that are created in response to undesirable behaviours and poor outcomes. In turn, these mechanism influence new behaviours—thus creating a new culture, which result in changing outcomes and different response options for policy makers and health care leadership (OECD, 2020[2]).

58. On a theoretical level, measuring culture change can seem amorphous to organisational leadership, as compared to other dashboard indicators, and may require a long lead-time to implement a or improvement and the slower long-term processes of organisational development towards a positive PSC. For this reason it is important to consider measures of PSC in the context of other measures, including outcomes and patient safety indicators, as well as in the context of long term improvement.

2.5. Chapter Conclusions

59. Currently, measurement of PSC is understood to be a leading indicator of patient safety, in contrast to reported adverse events and error and injury rates, which are lagging signs of performance. Measurement allows health care leaders to access information about PSC across organisational units and a variety of professional groups. Meaningful information about PSC can guide policy makers, hospital managers, and staff in improving and strengthening their cultures and improving safety outcomes.

60. **Tools to measure PSC have proliferated in recent decades and are now in wide-spread use.** This report builds on previous work from the European Union Network for Patient Safety, which identified three tools that are most frequently applied to assess aspects of PSC in EU member states, all of which are openly available, have been translated into many languages and adapted for use in various countries. Beyond these, a wide variety of other tools exists, but are less commonly used. **A number of challenges persist for measuring PSC**, including issues of reliability, validity, response rates, and variation of measure domains, definitions, and methods. PSC measurement is best integrated into a broader policy framework and its results should be made available and visible to relevant actors. In many health care systems, PSC tools will form part of a larger set of measurement indicators that include traditional patient safety indicators as well as patient-reported outcomes.

3. The 'state of the art' for PSC measurement and use in OECD Countries

3.1. Uses of measurement tools across levels of government and clinical practice

61. To better understand the current uses of PSC measures across OECD countries, the OECD Secretariat distributed a survey to the Working Party for Health Care Quality and Outcomes (HCQO) between July and December 2019. The Secretariat received information from 22 OECD countries (61% of OECD countries), including Australia, Austria, Belgium, Canada, Chile, Czech Republic, Denmark, Finland, Iceland, Ireland, Israel, Japan, Luxembourg, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Turkey, the United Kingdom, and the United States of America. Two additional countries, Romania and Malta also completed the survey.

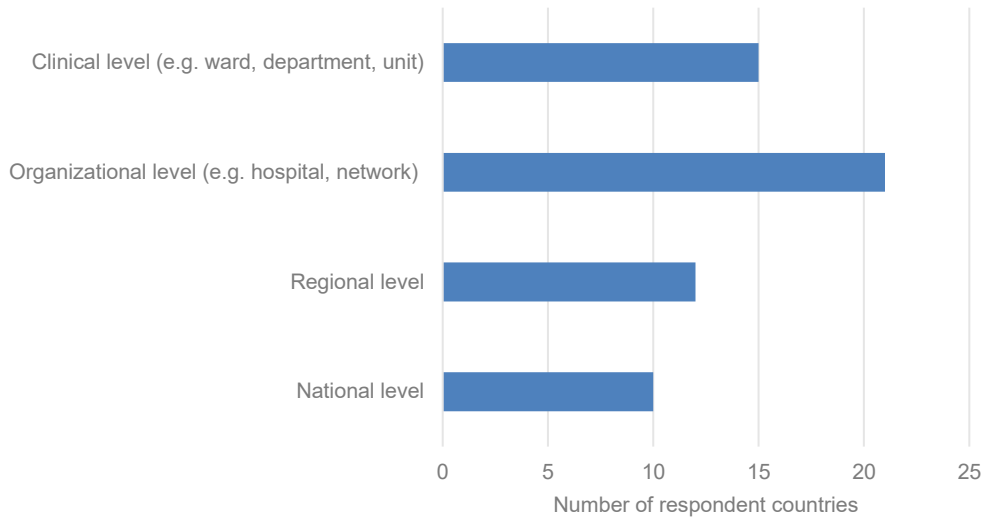
3.1.1. National level efforts to measure PSC

62. Overall 20 of 24 reporting countries indicated that PSC was currently measured (in at least some instance) their country's health system at any level (national, regional, organisational or clinical). Four countries do not currently, systematically measure PSC at any level, these are Iceland, Ireland, Romania, and Turkey. Previous work has been done in Iceland to measure PSC at the unit level, but there are no active projects at the time. Ireland had conducted PSC measurement at the hospital level in 2013/2014—but has no active initiatives. However, culture is a top priority as documented in Ireland's Patient Safety Strategy 2019-2024 (HSE, 2019[86]). Similarly, while there are not current active initiatives in Turkey, the HSPSC has been translated into Turkish, and the Ministry of Health has indicated plans to implement the survey to hospital managers and employees through a web-based online system at the national level. Romania indicated that there was also not current measurement of PSC, but did indicate that there were plans to plans to begin new activities) related to the collection and use of PSC measures. A small scale study using HSPSC was tested in six Romanian hospitals in 2014 (Tereanu et al., 2017[87]).

63. Ten countries (Austria, Belgium, Israel, Norway, Spain Sweden, Malta, Portugal, England (UK) and Wales (UK) indicated that PSC is measured at the national level, 12 at the regional level, 21 at the organisational level, and 15 at the clinical level[1]. Of countries that reported measurement tools were used at the regional level six reported that tools were used in most regions, while five indicated that they were only used in a few regions. At the organisational level, eleven countries indicated that PSC measures were used in some/a few organisations, while nine indicated that they were widely used. Regarding use in at the clinical level (clinic, ward, or department), six countries indicated that PSC measures were widely used at this level, while eight indicated that they were only used in some/a few sites. Only four countries (Belgium, Norway, Portugal, and the England [United Kingdom]) reported using PSC measures at all levels.

[1] England, Northern Ireland and Wales are counted separately due to variation.

Figure 3.1. Countries indicating that there are PSC measures collected at each health system level



Note: N=26 Respondent Countries, England, Northern Ireland and Wales are counted separately due to variation.
Source: OECD 2019 PSC Measurement Survey

64. Seven of the reporting countries (Austria, Belgium, Canada, Israel, Portugal, Spain and Slovenia) indicated that there was national program that is responsible for PSC monitoring. Responsible programs or organisations included Austria's QBE data collection program, Belgium's Plan on Quality and Patient Safety (Federal Programme), Canada's Accreditation Canada/ Health Standards Organization, Portugal's National Plan for Patient Safety 2015-2020, Spain's Patient Safety Strategy for the national Health System, Slovenia's Resolution on the National Health Care Plan 2016-2025. In Israel, PSC measurement is required as part of accreditation requirements for hospital licensure and is included in national safety indicators.

National strategies and initiatives to measure and improve PSC

65. While measurement may not be active at the national level, many countries highlight its importance in national patient safety strategies or other guidance documents.

Canada

66. Canada's Canadian Patient Safety Institute (CPSI)—a federally funded, pan-Canadian health organisation—includes in its mission the goal "to inspire and advance a culture committed to sustained improvement for safer health care". National level information on PSC is used by CPSI to demonstrate its system impact and performance outcomes. Strengthening and using PSC measures in the future is a stated priority for CPSI in its improvement efforts. PSC measurement is also part of national accreditation standards required by Accreditation Canada (see section 3.6.1). Accreditation Canada is a national accrediting body that measures patient safety with standards, patient safety Required Organisational Practices (ROPs) and the PSC survey. All national health care organisations in the accreditation program must address the ROPs, patient safety criteria and the PSC survey thresholds.

Belgium

67. As of 2019, a new pay for performance scheme has been implemented for acute care hospitals in Belgium, and as a result, there is no longer a federal requirement for measurement of PSC in acute care

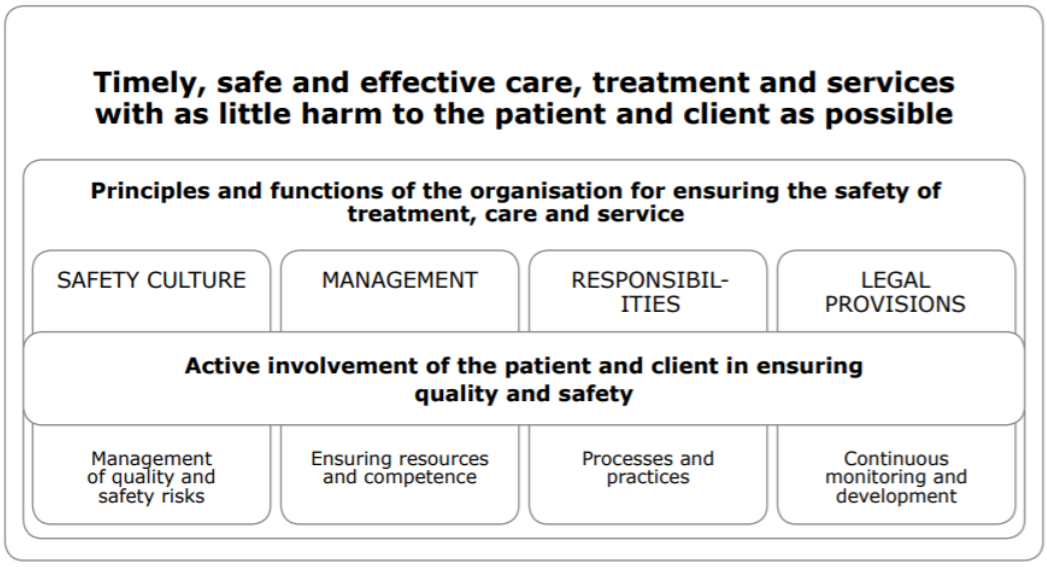
hospitals. However, the pay for performance scheme requires hospital accreditation—which in turn, require standards of measurement of PSC (Federale Overheidsdienst, 2019[88]) (see section 3.6.1 on accreditation). Hospitals may still report HSPSC results to on a voluntary to a national database hosted by Hasselt University, who maintains a national PSC database for benchmarking. After hospitals provide data to the database, they are provided with immediate feedback and benchmarking data on an annual basis. This research has yielded a comprehensive database that allows to identify particular trends and patterns (Vlayen et al., 2014[89]). This information has been particularly insightful to inform decentralised unit-level interventions that aim to improve communication and teamwork, but also for hospital-level policy approaches about error management, transition and staffing (Vlayen et al., 2013[90]).

68. In 2007, PSC measurement was initiated as part of a federal program (2007-2017) by the Belgian government to improve health care quality and patient safety in the Belgian acute, psychiatric and long-term care hospitals. The goal of the program was to establish a safety management system, to analyse intramural and integrated care processes as well as to develop indicators of quality and safety. Measuring safety culture was seen as an elementary part of safety management. To do so, HSPCS by AHRQ was translated to French and Dutch, and psychometrically tested (Vlayen et al., 2014[89]). To enhance the suitability of the HSPCS for its use within the psychiatric hospitals, the demographic categories of work area and profession were adapted to the context of psychiatric care. The measurement was first introduced in one hospital and eventually extended to 143 hospitals, which is a coverage of 92%. Response rates were around 50%. As of 2017, there have been three national level measurements of PSC in Belgium with benchmarking of the results, organized by Hasselt University —including acute care, psychiatric, and long-term care hospitals. A fourth national benchmarking is scheduled for next year for acute, psychiatric and long-term care hospitals.

Finland

69. In Finland, while PSC is not measured at a national level, it has been a cornerstone of the countries last two patient safety strategies. In addition to highlighting the importance of PSC in its own right, PSC is also noted under the Management pillar—where management is tasked with ensuring a strong PSC, that includes a “blame-free” environment and high levels of transparency (see Figure 3.2) (Ministry of Social Affairs and Health, 2017[91]).

Figure 3.2. Core components of Finnish Patient Safety Strategy



Source: (Ministry of Social Affairs and Health, 2017[91])

Israel

70. Between 2012 and 2015, the Israeli Department for Health Care Quality Testing led an organisational safety culture survey based on HSPSC. The HSPSC was validated by Israeli experts and was adapted to the Israeli milieu (Ministry of Health (Israel), 2016[92]). Thirty-six general hospitals around the country participated, randomly sampling five hundred health care workers from each hospital. Overall, 3,529 workers (with a 27% response rate) responded in 2012 and 2,586 in 2015. Findings from this analysis recommended that promotion organisational safety culture be maintained as a priority area under the Ministry of Health. National assessments have continued on a 2-3 year basis since then. As of 2018 and 2019, measures of organisational safety culture have been included in Israel's National Program of Patient Safety Indicators. This indicator uses the HSPSC and compliance rests on the rate of health care workers who compete the survey (Ministry of Health (Israel), 2019[93]).

Portugal

71. In Portugal, the HSPSC was originally translated and validated in Portuguese by a researcher. As of 2012-2013 the Ministry of Health adopted the measure nationally with the support of national legislation requiring PSC measurement. Hospitals are required to follow nationally issued guidelines on measurement, which includes information on how to implement the survey and the timing by which it should be completed. All hospitals apply the tool at the same time of year on a bi-annual (every two years) basis. Information is stored in a database managed by the Ministry of health. Portugal's National Plan for Patients' Safety 2015>2020 includes Safety Culture Improvement as its first listed goal, with the objective of reaching a national weighted average of all the fields of the patients' safety culture assessment questionnaire of ≥ 50% by 2020 (DGS, 2015[94]).

Figure 3.3. Actions on PSC included in Portugal's National Plan for Patients' Safety 2015-2020

Actions	Schedule						Responsible Entity(ies)
	2015	2016	2017	2018	2019	2020	
Take part in the patients' safety culture assessment in hospitals		X		X		X	Hospitals of the National Health Service, Hospitals, Local Health Units and associated entities
Take part in the patients' safety culture assessment in primary healthcare.	X		X		X		Health Centres' Clusters and Local Health Units
Monitor institutions' membership rate	X	X	X	X	X	X	General Directorate of Health
Implement improvement measures in Hospitals according to the obtained results.	X		X		X		Hospitals, Local Health Units of the National Health Service and associated entities
Implement improvement measures in primary healthcare centres accordingly to the obtained results.		X		X		X	Health Centres' Clusters and Local Health Units
Achieve a national weighted average of all the fields of the patients' safety culture assessment questionnaire in the programme contracts.		X	X	X	X	X	Central Administration of the Health System

Note: Membership rate refers to organisational participation in mandated PSC measurement activities.
Source: (DGS, 2015[94])

Spain

72. In Spain, the Patient Safety Strategy for the National Health System for the 2015-2020 Period documents patient safety culture, human factor and training as the first Patient Safety Strategy line of work carried out in the National Health System. This line of work includes three sub-categories: 1) information and dissemination, 2) perception related studies, and 3) training professionals. In particular, the objective to "further enhance PSC, human and organisational factors" includes the specific sub-objective to "favour the evaluation of the safety climate in the health care organisations and the dissemination of their findings, as an aid in the implementation of safe practices." This is followed by the recommendation that there be periodic evaluations of safety climate, using validated tools, to identify organisational strengths and weaknesses. The Ministry of Health, Social Services and Equality (MSSSI) has promoted studies to enhance the understanding of PSC in various health care settings (MSSSI, 2015[95]).

United Kingdom

73. In the United Kingdom, recently released July 2019 NHS Patient Safety Strategy for England includes PSC as one of two foundations—and plans for the adoption and promotion key safety measurement principles and culture metrics (NHS England and NHS Improvement, 2019[25]). Planned activities for expanding measurement of PSC include the following:

- NHS staff survey q17 (fairness and effectiveness of reporting) and q18 (staff confidence and security in reporting), published annually every spring (NHS, 2019[96])
- Explore the introduction of further metrics related to safety cultures, e.g. monitoring levels of staff suspension and of anonymous incident reporting
- Monitoring progress in relation to the well-led framework via CQC inspection outcomes as published

3.1.2. Regional level strategies and measures for improving PSC

74. PSC measurement initiatives are more commonly carried out at the regional level, as opposed to the national level (see Figure 3.1). Spain has reported on actions carried out at the regional level in order to foster safety culture, noting that all of Health Regions are carrying out patient safety training actions and 81% have a specific patient safety training program in place for health care professionals. Over 70% of the Health Regions report that they disseminate standards, measures for reducing incidents and best practices in patient safety to staff professionals.

75. In Norway, PSC surveys are conducted by the Regional health authorities in cooperation with the National Directorate of health, and ordered by the Ministry of Health and Care services. Norway has noted that there are methodological issues that need to be resolved before reports are produced at the national level, in particular, pertaining to how results are calculated and how variation is presented.

76. Denmark has conducted a regional wide PSC measurement in the largest of the five Danish regions accountable for hospital care, another region has conducted a pilot where the results are being used to inform decisions about whether to adopt the measurement at region level (see **Box 3.1**). The MaPSaF tool was last used to undertake a cultural review of adverse incident reporting in 2018/2019 across each HSC Trust in Northern Ireland. Finally, some states and territories in Australia include questions about PSC as a part of annual surveys of organisational culture and engagement.

Box 3.1. Working with PSC in Danish health care

A brief historical overview of activities

In 2001 a study on adverse events in Danish hospitals was conducted and the results contributed to a decision to introduce mandatory reporting of adverse events and a national reporting and learning system. Hence, the Danish Act on Patient Safety was introduced in 2004, but already in 2002, the importance of a supportive culture for a high level of patient safety, and the active role of the line management in creating such a culture, was emphasised in the Danish National Strategy for Quality Improvement in Health Care 2002 – 2006.

The first Danish studies on PSC formed part of the legislative preparation for the Act of 2004, and in 2006 the first Danish PhD thesis on PSC was published. This thesis addressed topics such as experiences with reporting of adverse events, ethics in patient safety, apologising after adverse events, and the relationship between safety culture, occupational health and patient safety. Despite this early focus on PSC, the topic did not manage to attract serious clinical, management, scientific, or political attention until the second PhD thesis on the topic was published in 2016. This thesis focused on measurement, leadership and improvement of PSC. With this thesis, a validated instrument for measuring PSC and a manual of how to do was introduced. It was also documented that PSC can improve while improving clinical leadership knowledge and skills in quality management. The outcome of this thesis set the basis for measuring, auditing and improving with PSC in hospitals as part of clinical risk management and within research.

From 2016 onwards there has been more and more focus on the role of culture and PSC, in specific in Danish hospital care. The Danish Society for Patient Safety has emphasised the importance of PSC as a lever for better patient safety, and they have addressed the issue of cultural changes in their improvement projects. Individual units and organisations e.g. nursing homes and hospital departments have worked with measuring and improving PSC as part of quality improvement. Also, PSC was used as an outcome measure in a large in-situ simulation intervention study across hospitals. In two of the five Danish regions accountable for hospital care, pilots of a PSC measurement have been made to qualify the political strategical decision of a regional measure and plan the execution of the measurement and follow up activities respectively. A measurement has been performed across all hospitals in the Capital Region of Copenhagen, it involved answers from more than 15,000 health care professionals, and it was motivated by a serious breach in patient safety. The measurement was called PLUS, it was performed, and results fed back to the hospitals in the spring of 2019.

Source: Solvejg Kristensen

3.1.3. Local uses of PSC measures

77. Local uses (i.e. at the hospital/ward level) of PSC measures are reported to be numerous, however respondents the OECD survey were not always aware of all uses for which PSC were being used in organisational and clinical settings, or what tools were being uses, if they were not part of a national or regional initiative. For example, Australia reports that there exist a number of locally developed tools to measure PSC—but national and regional authorities have little information on them. Locally and organisationally created initiatives have often drawn from questions from more well established surveys, some add questions that are relevant to accreditation or to areas that are a focus locally (section 3.6.1).

3.2. Uses of survey tools across OECD countries

3.2.1. Most commonly used tools

78. The majority (n=15) of countries indicated that the HSPSC tool was used in their country, and 13 of these countries indicated that the HSPSC tool is the most commonly used tool. In country interviews, respondents often noted that the survey was used because it was publically available and there was an existing research base for the tools use, including analysis of the tools validity and psychometric properties.

79. A few countries note that the SAQ is the most commonly used tool in their countries, including Australia, Denmark, and Norway. Denmark primarily uses the SAQ tool, which been translated and adapted for the Danish setting, and has been found to have good construct validity and internal consistency reliability (Kristensen et al., 2015[97]). The Danish version of the SAQ has likewise been used to study PSC in the hospital setting in the Faroe Islands (Kristensen et al., 2016[98]).

80. A few other countries noted that they used the MaPSaF, including Northern Ireland and Wales in the United Kingdom, which both indicated that it was the most commonly used tool.

Table 3.1. Country usage of common tools at any setting or level in the country's health system and the most commonly used tool in that country

SAQ	HSPSC	MaPSaF
Australia*	Australia	Australia
Denmark*	**Belgium***	the Netherlands
Iceland	**Chile***	Sweden
Malta	Czech Republic	**United Kingdom (Northern Ireland, Wales)***
Norway*	**Finland****	
Slovenia	**Iceland***	
Spain	**Israel***	
Sweden	**Japan***	
	Luxembourg*	
	The Netherlands*	
	Portugal*	
	Slovenia*	
	Spain*	
	Sweden*	
	United States*	

Note: * indicates the most commonly used tool in this country
** Finland uses the HSPSC and the Nordic Patient Safety Culture Questionnaire (TUKU) equally
Source: OECD Survey on Patient Safety Culture Measurement, 2019

81. Some countries use a subset of questions included in a specific tool. The most commonly used tool in Norway is the SAQ, however, Norway only uses the dimensions of teamwork culture (six items) and safety culture (seven items). Other items related to work environment are adopted from another occupational environment survey. Similarly, since 2014, Sweden has adopted a subset of 11 questions from the HSPSC.

82. The most commonly used tool in Austria, Canada, Czech Republic, Malta and in England in the United Kingdom were not one of these three tools. In England, two questions, consisting of seven items are included in the NSH Staff Survey as the primary means to collect information on PSC. More information on country specific tools is described in the next section. Finland uses the HSPSC and the Nordic PSC questionnaire (TUKU) in equal measure. Malta reports the use of a tool which includes safety alerts for adverse events and near-misses. The most commonly used tool in Austria and Canada are described in more detail below (See section 3.2.2).

83. In Australia, both SAQ and MaPSaF are used. Overall, the SAQ is the most commonly used survey instrument. In addition, the MaPSaF is often used at a hospital level, but information on how often it is used is not collected. Efforts are underway to develop a toolkit to develop and support measurement of PSC and the use of this information for quality improvement. This work will include the development and validation of a short survey on PSC.

3.2.2. Country specific PSC measurement tools

84. In Canada, researchers have developed a tool called the Canadian Patient Safety Climate Survey (Can-PSCS) specifically adapted to the Canadian context (Ginsburg et al., 2014[99]). The tool is designed to capture staff perceptions of PSC and includes the following domains: (1) organisational leadership support for safety; (2) incident follow-up; (3) supervisory leadership for safety; (4) unit learning culture; (5) enabling open communication I: judgement-free environment; (6) enabling open communication II: job repercussions of error (Ginsburg et al., 2014[100]). The use of this tool is required by accreditation processes (see section 3.6.1).

85. Austria's Federal Health Agency is mandated by the Federal Act on Hospitals and Nursing (KAKuG) to provide country-wide reports on quality indicators for acute hospitals, rehabilitation sentences and outpatient clinics at regular intervals. Information is collected using an online survey platform for quality reporting (including aspects of patient safety) and all hospitals are required to take part in the self-assessment (Länder and Sozialversicherung, 2017[101]). Common PSC tools where consulted in informing the creation of the survey, but there is not a specific PSC domain included in the tool—however there are questions related to risk management and patient and employee safety. Findings from the 2019 report find that 149 out of 155 institutions (96%) have a structured approach to dealing with risks, critical events and efforts, and that 152 out of 155 institutions (98%) use risk management tools.

86. A commonly used tool in Finland is the Nordic Patient Safety Culture Questionnaire. The tool consists of 65 Likert-type questions, using a 1 (completely disagree) to 6 (completely agree) scale (Reiman, Silla and Pietikainen, 2013[102]). The tool encompasses the physiological dimensions of safety motivation, sense of control, sense of personal responsibility, and mindfulness. The tool includes the organisational domains of work conditions management, work process management, safety management and leadership, supervisory support for safety, proactive safety development, hazard control, competence management, change management, and management of third parties (Reiman, Silla and Pietikainen, 2013[102]). Finally, the tool also includes an option to include an option to include an open ended question regarding perceptions if PSC to allow for the collection of qualitative information.

87. Mapping domains across these tools and the existence of mapping onto more commonly used tools is a potential future area of work.

3.3. Data collection sources and methods

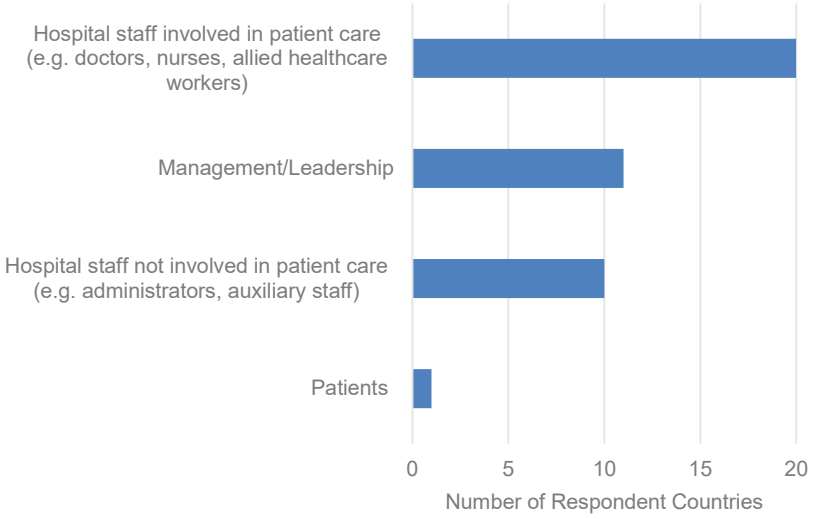
3.3.1. Type of staff surveyed with PSC tools

88. A study examining a total of 408,563 respondents from 1,119 organisations, using data from 64 studies found that of all respondents just over 51% were nurses or health assistants, 12% medical/technical staff, 10% physicians, 7% managers/administrative staff, 7% others, 7% patient care assistant/hospital aide/care partner, 3% no answer, and 1% pharmacists (Waterson et al., 2019[69]). These findings are generally in line with information provided by countries indicating who is consulted in PSC data collection. For example, a breakdown of the national level survey results in Sweden found that survey respondents were more likely to be women than men, and that the profession most likely to respond to the survey were nurses (SKL, 2015[103]).

89. Most (n=21) countries indicated that hospital staff involved in patient care were surveyed in the course of data collection. To a lesser extent hospital management and other hospital staff not involved in

patient care were included in PSC data collection efforts (11 and ten countries respectively). To date, few efforts have involved patients in assessments of PSC. Only one country (Romania) indicated that patients were included in data collection efforts. No country mentioned the consultation of patients in PSC as routinely consulted sources of information.

Figure 3.4. Type of staff surveyed using the most commonly used survey tool in the country



Note: N=24 Respondent Countries
Source: OECD 2019 SC Measurement Survey

3.3.2. Sampling methods and response rates

90. Several countries and programs offer guidance on sampling methods and response rates to inform implementation of the PSC surveys. In Norway, each hospital samples all staff in every unit and with a response rate of 70%, or higher, as the aim. Norway has had good experiences with the response rates, which have been found to be generally high. Similar results were found in Sweden, when the HSPSC was rolled out nationally (between 2011 and 2014), the response rates were over 50% in all councils and regions (SKL, 2015[103]).

91. The NHS Staff Survey, which includes two domains specific to PSC, and many other questions related to teamwork and safety environment, provides extensive guidance on implementation of the survey, including timelines, sampling, data collection and analysis. For example, guidance notes that minimum sample size should be 1,250 for all participating organisations, and that staff should be sampled in proportion to the breakdown of employee roles/positions within the organisation (King et al., 2019[104]).

92. AHRQ provides guidance on survey implementation as well, including guidance on suggested sample sizes depending on the total numbers of physicians and staff being queried in the participating unit or organisation. Minimum sample sizes can be found in Figure 3.5.

Figure 3.5. HSPSC guidance on minimum sample sizes by numbers of physicians and staff

Population of Physicians and Staff	Minimum Sample Size*	Expected Response (Assuming 50% Response Rate)
500 or fewer	Census (all providers and staff)	At least 50%
501-999	500	250
1,000 -2,999	600	300
3,000 or more	800	400

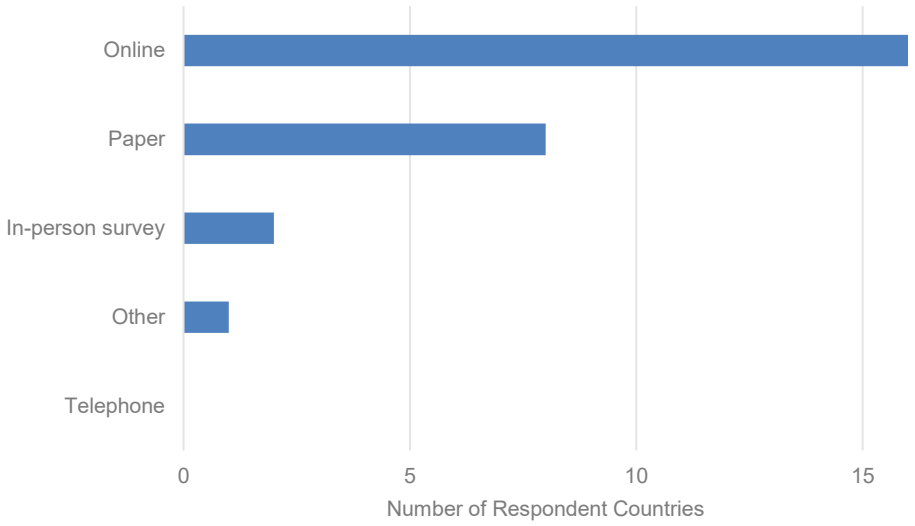
Source: (AHRQ, 2016[105])

93. The Leapfrog Hospital Survey, an annual voluntary survey of U.S. hospitals, in which Leapfrog asks hospitals to report quality and safety data and then publicly reports that information by hospital, includes several aspects related to leadership and PSC. Specifically, the survey reports if hospitals have conducted a culture of safety survey using a nationally recognized tool that has demonstrated validity, consistency and reliability. Related to sampling, the survey asks if surveyed units account for at least 50% of the aggregated care delivered to patients within the facility, and includes high patient safety risk units or departments (Leapfrog, 2019[106]).

3.3.3. Types of tool used and data collection methods

94. The vast majority of respondent countries noted that surveys were administered via online survey methods. To a lesser extent, surveys were administered in paper format. Two countries (Romania and the United Kingdom) indicated that the survey was administered in person. The United Kingdom uses the MaPSaF in Wales and Northern Ireland, which is implemented in person with groups of staff. Finally, one country indicated "other" specifying that this was referring to the use of various collection methods. No countries reported using telephone to administer survey tools.

Figure 3.6. Method of administration for the most commonly used survey tool in the country



Note: N=24 Respondent Countries
Source: OECD 2019 SC Measurement Survey

3.3.4. Integration into other employee satisfaction or operations type surveys

95. Many hospitals and health systems already have in place staff survey infrastructure that can be utilised for the purpose of soliciting information on PSC in the national context. Some countries have already noted that they coordinate the collection of PSC data with other staff requests for information. Information derived from PSC surveys is useful to inform patient safety practices, as well as to inform human resources related issues such as staffing and stress management.

96. In Sweden, a combined survey dually assess PSC and working environment (see section 1.8). A similar approach has been taken up in the United Kingdom in England, which integrates three PSC items into the NHS staff survey (see section 0). Finally, the Austrian system integrates questions related to risk management and patient and employee safety into its hospital level survey (see section 3.1.2)

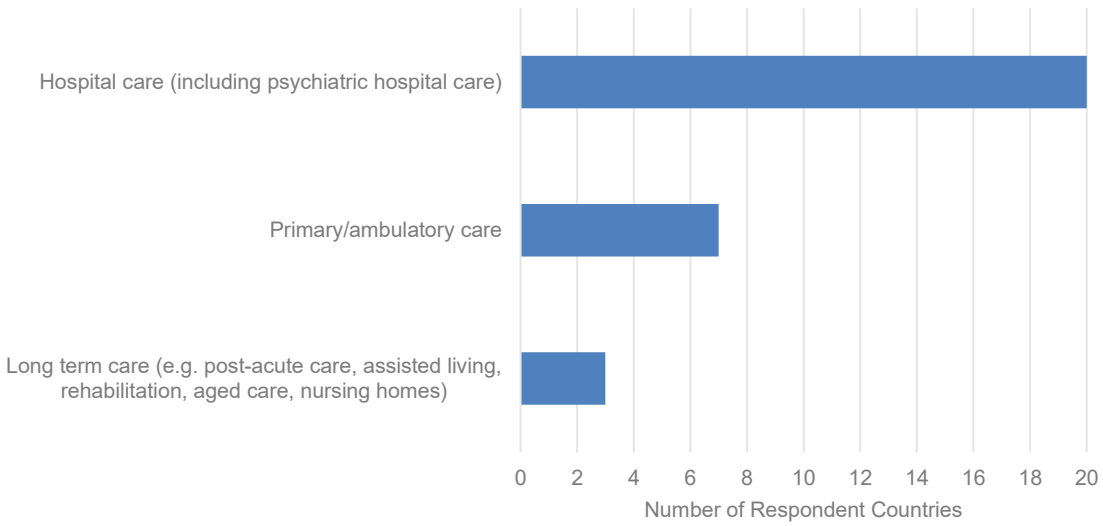
97. In some cases, employee surveys are administered by private companies, such as Press Ganey, whose survey's include topics such as employee engagement (HBR, 2019[107]). Employee surveys, including those run by hospital level HR or private companies may include aspects of PSC.

3.4. Use of measurement tools across care settings

3.4.1. Use of measurement tools in hospital care

98. Most existing tools have been developed for the Hospital Setting, and countries have primarily focused use of PSC measures in this setting. 20 out of 23 countries reported that PSC measures were used in hospitals in their country (including psychiatric hospitals). This finding is consistent with the literature, for example, a 2019 review of 62 studies using HSPSC, found that 84% of studies took place in the hospital setting (Waterson et al., 2019[69]).

Figure 3.7. Location of administration for the most commonly used survey tool in the country



Note: N=24 Respondent Countries
Source: OECD 2019 PSC Measurement Survey

99. In Spain, 2009 study included the use the HSPSC (translated into Spanish and validated) across a randomly selected sample of 24 acute hospitals in the national health system. In total, 2,503 surveys were analysed with an average response rate of 40%.The findings of this study showed that potential areas of improvement included "Staffing", "Teamwork among units and departments", "Perception of safety" and

"Hospital Administration support in patient safety". The report also concluded that efforts to capture the state of PSC should be conducted on an annual basis.

100. There are unique patient safety concerns in psychiatric settings, where the focus of patient safety often lies in creating safe physical environments for patients. After the roll out of the HSPSC in Belgian acute care hospitals, the tools were also expanded for use in psychiatric and long term care hospitals. Several adjustments to the survey were made, in consultation with hospital delegates, to adjust demographic items related to work area and staff positions (Waterson, 2014[11]).

3.4.2. Use of PSC measurement tools in primary care and ambulatory care

101. Use of PSC measures in other settings, such as primary and ambulatory care, is less common. A recent publication by the National Quality Forum assessing patient safety tools in ambulatory care identified over 40 measure concepts related to safety culture, but did not identify any fully specified measurement tools (NQF, 2018[108]). Measure concepts included tools and topics evaluating the perceptions and attitudes of clinicians, and observational assessments of organisational structures, practices, or characteristics suggested to be indicative of safety culture. In addition, tools, dimensions, and frameworks differ for the primary care setting as compared to acute care (Kirk et al., 2007[109]). Finally, there appears to be limited evidence of interventions to improve PSC in the primary care setting (Modak et al., 2007[110]) (Verbakel et al., 2016[111]).

102. Seven countries noted that they used PSC measures in the Primary Care Setting (Canada, Denmark, Portugal, Slovenia, Sweden, the United States and the United Kingdom [Wales]). Spain has conducted extensive work to evaluate PSC in the primary care setting. AHRQ's Medical Office Survey on Patient Safety Culture (MOSPS) was adapted, validated, and administered nationwide to 4,344 professionals from 215 health centres in 15 Health Regions (Ministry of Health, Social Services, and Equality, 2015[112]) (MSSSI, 2009[113]). Overall, the study found high levels of perceived patient safety among primary care professionals, with the highest levels found in the perceptions of nursing staff. Research from Belgium (Flanders) has also rolled out PSC measures in primary care in two primary care, home health organisations, receiving returned questionnaires from 2,930 employees (Desmedt et al., 2018[114]).

3.4.3. Use of PSC measurement tools in long term care

103. A scoping review of PSC in long term care homes found that there is knowledge gap in terms of available evidence regarding safety culture of Residential Homes across countries. The HSPSC includes a version for use in care homes, however there is limited evidence regarding how widely this has been used. LTC (Gartshore, Waring and Timmons, 2017[115]). Three countries (Canada, the United States, and the United Kingdom (Wales) reported using PSC measurement tools in Long term care settings such as post-acute care, assisted living, rehabilitation, aged care, and nursing homes.

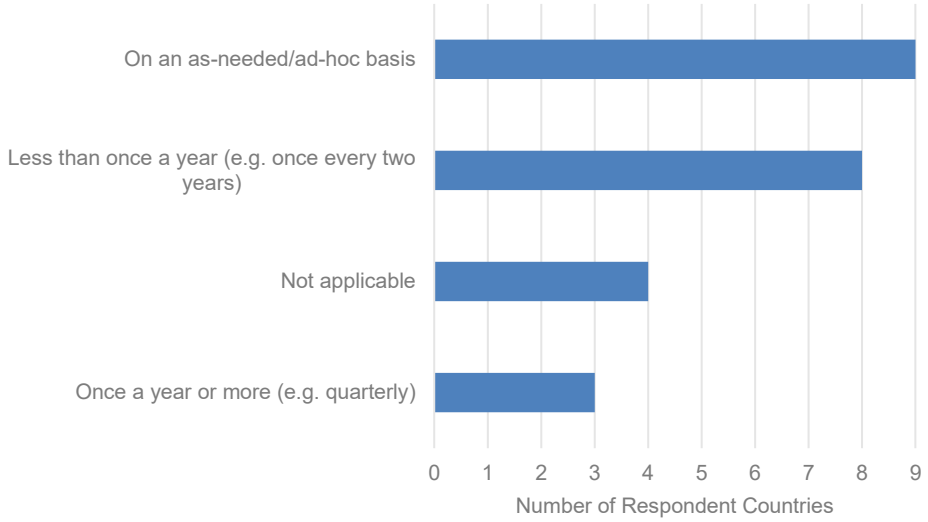
3.5. Timing of PSC measurement initiatives

104. Six respondent countries (Belgium, Canada, Iceland, Israel, Japan, and Spain) indicated that there has been a long tradition of collection of information on PSC, noting that in their country there had been a previous or ongoing national level activity to collect PSC measures beginning over ten years ago. Seven respondent countries (Ireland, Norway, Sweden, Slovenia, Portugal, the United States, and the United Kingdom) indicated that their country began collecting information on PSC five to ten years ago. An additional two countries, Austria and Luxembourg, reported that measurement had begun in the last five years.

105. Related to the frequency of data collection efforts, three countries reported conducting PSC measurement activities more frequently than annually and eight reported that PSC is measured less than annual (for example, every two years). The AHRQ SOPS database, for example, collects hospital level

data for benchmarking on a bi-annual basis (AHRQ, 2019[116]). Portugal also noted that information is collected nationally on a two-year basis.

Figure 3.8. Frequency of administration for the most commonly used survey tool in the country



Note: N=24 Respondent Countries
Source: OECD 2019 PSC Measurement Survey

3.5.1. Ad-hoc or time limited initiatives

106. Many countries have initiated once-off national-level initiatives that have not been repeated on a regular basis.

107. For example, in Sweden, a national patient safety initiative was held from 2011 to 2014 and included measurements of PSC were being performed twice nationwide in hospitals and primary care organisations. This initiative used the full HSPSC (translated into Swedish and adjusted for the Swedish context), plus an additional six questions related to patient safety. Survey results were publically reported at regional (in some cases) and national level. Hospitals were required to implement the survey to be eligible for funding in a first round. In following rounds, the funds were tied to PSC related activities determined by the measures result in the previous round. Following 2014, a national initiative was launched to develop central questions concerning patient safety, combining questions on PSC with routine data collections on employee work environment. PSC items included in the survey are 11 derived from HSPSC questions selected to supplement existing questions concerning work environment (SKL, n.d.[117]). The survey is managed by the SKL (The Swedish Association of Local Authorities and Regions). Hospitals implement the survey on a voluntary basis every one or two years. National reports are no longer generated or published. Measurements with the full HSPSC tool are now performed only in some regions and locally. Ireland also initiated a national assessment of PSC between 2013 and 2014 using an adapted version of the HSPSC (HSE, 2015[118]).

108. Between June 2013 and March 2014, the Health Service Executive (HSE) of Ireland—the provider for the public health system—undertook a PSC Survey of Staff in Acute Hospitals. The program was rolled out nationally and used a modified version of the HSPSC tool (HSE, 2015[118]). The activity was one off, and has not been repeated.

109. In Australia, there has also been a one off state-wide measurement in the past. The activity occurred in 2009 in South Australia and used the Australian validated version of the SAQ. Where there is regular monitoring has continued at the hospital or organisational level, surveys are generally implemented between 18 and 24 months. Surveys are often incorporated into staff surveys for other purposes, and for these reasons, they may be dependent on the timeline for other initiatives, as is the case in Northern Ireland (UK).

3.6. Use of measurement tools for learning and accountability purposes

110. OECD member countries report using PSC measurement tools for multiple purposes—ranging from internal learning at a clinical level to national level accreditation or contracting programs. The largest number of countries utilize PSC measures at the organisational level for the purpose of driving improvement within hospitals.

Table 3.2. Uses of PSC measures for accountability and learning purposes across OECD respondent countries.

	System level: National	System level: Regional	Organisational level (e.g. hospital, network)	Clinical level (e.g. ward, clinical unit)
Accountability- Pay for Performance	X	Spain	X	X
Accountability-Contracts	Belgium	X	X	X
Accountability-Commissioning	X	Spain	Spain	Spain
Accountability-Accreditation	United Kingdom (England) Portugal	Canada	Belgium Canada Finland Israel Japan Luxembourg The Netherlands Slovenia	Finland Slovenia
Accountability-Public reporting	Austria Portugal Spain Sweden United Kingdom (England)	Austria Portugal Norway Sweden	Finland Israel Spain Sweden United Kingdom (England)	Spain Sweden
Learning - Improvement within hospitals	Austria Belgium Iceland Luxembourg Spain Sweden United Kingdom (Wales)	Australia Austria Canada Denmark Portugal Spain Sweden United Kingdom (Wales)	Australia Austria Belgium Canada Chile Denmark Finland IsraelJapan Luxembourg Malta The Netherlands Norway Portugal Slovenia Spain Sweden United Kingdom (England, Wales) United States	Australia Austria Belgium Canada Chile Denmark Finland Japan Malta the Netherlands Norway Spain Sweden United Kingdom (England, Wales)
Learning - Across hospital networks	Spain United Kingdom (Wales)	Australia Denmark Portugal	Canada Malta Finland	Canada Finland Malta

		Spain United Kingdom (Wales)	Israel The Netherlands Norway United Kingdom (Northern Ireland, Wales)	the Netherlands United Kingdom (Wales)
Learning - Including all stakeholders	Spain Sweden United Kingdom (Wales)	Spain Sweden United Kingdom (Wales)	Sweden Luxembourg The Netherlands Malta Belgium United Kingdom (Wales) The United States	Sweden The Netherlands Malta Belgium United Kingdom (Wales)

Source: OECD Survey on Patient Safety Culture Measurement, 2019

3.6.1. Use of PSC tools for accreditation purposes

111. Eight countries use PSC tools for accreditation purposes at the organisational level, Belgium, Canada, Israel, Finland, Japan, Luxembourg, The Netherlands, and Slovenia.

112. In the Netherlands, there is not a national program for measuring PSC, but it is widely done as a part of hospital accreditation, which requires assessment of PSC using a validated tool at least once every four years. Dutch hospitals primarily use the Belgian version of the HSPSC, as it has been validated in Dutch, with minor changes to make it applicable to the Dutch health system. Accreditation is conducted by the Netherlands Institute for Healthcare Accreditation (NIAZ) and overseen by the Dutch Healthcare Inspectorate (IGZ).

113. In England, PSC measures are used by the countries independent quality regulator for health and social care, the Care Quality Commission (CQC), to inform its inspections of NHS Trusts as part of the intelligence (intelligent monitoring) it gathers on these organisations. The CQC is responsible for ensuring the quality of the health and social care—and uses the intelligence monitoring statistical surveillance tools to identify how to prioritise providers who are at highest risk for providing poor quality care for inspection (Griffiths et al., 2017[119]).

114. The Can-PSCS is a mandatory component of Accreditation Canada's program. Accreditation Canada (AC) is the only national independent, third party assessment body that assesses all Canadian hospitals and health systems on compliance to evidence-based, national standards for patient safety and quality. This objective third-party review, extends from clinical care provisions to governance, leadership and administration, improving patient safety and reducing risk in health services organisations. As part of Accreditation Canada's program to receive accreditation, all health care organisations across Canada must complete a PSC survey during their accreditation cycle. Data and analytics from these surveys assist organisation to benchmark their performance and improve PSC gaps. Accreditation Canada provides national benchmarking data. Recent analysis of 56,000 PSC survey responses in Ontario show a persistent culture of non-disclosure among staff/physicians due to fear that disclosing serious errors would result in disciplinary actions, job loss or negative career impact.

115. While accreditation is not mandatory in Canada, most health regions/hospitals participate in the program. Accreditation Canada requires the survey be completed every 4 years, but it can be done more frequently if the organisation wishes. The data collected is used at the organisational/regional level, and is not generally aggregated, reported, or used nationally. Organisations must meet a minimum threshold for accreditation, however, the primary use of the survey is for learning and improvement purposes.

116. The Joint Commission, an accreditation organisation in the United States, includes standards for leaders to create and maintain a culture of safety and quality throughout the hospital (The Joint Commission, 2018[120]). Specifically, the Joint Commission's Standard LD.03.01.01, requires that leaders regularly evaluate the culture of safety and quality using valid and reliable tools and that leaders prioritize

and implement changes identified by the evaluation (The Joint Commission, 2012[121]). Hospitals in the U.S. are required to be approved by the Joint Commission or another approved accreditation body as a condition of licensure for the receipt of reimbursements through publically funded insurance programs.

117. Similarly, in Japan, assessment of PSC through measurement or other mechanisms is required by accreditation services such as the JCI (Joint Commission International). Data collection and study is supported by private organisations, who assist in analysing data from the various hospitals and report back with information on benchmarking and interventions to improve the PSC. Israel also notes extensive coverage of PSC measurement through hospital licencing requirements that mandate JCI accreditation.

118. While JCI does not mandate a specific tool for assessing PSC, JCI requirements include numerous standards related to PSC, in particular the following (JCI, 2017[122]):

- APR.9: Any individual hospital staff member (clinical or administrative) can report concerns about patient safety and quality of care to JCI without retaliatory action from the hospital. To support this culture of safety, the hospital must communicate to staff that such reporting is permitted. In addition, the hospital must make it clear to staff that no formal disciplinary actions (for example, demotions, reassignments, or change in working conditions or hours) or informal punitive actions (for example, harassment, isolation, or abuse) will be threatened or carried out in retaliation for reporting concerns to JCI.
- GLD.13: Hospital leadership creates and supports a culture of safety program throughout the hospital.
    - GLD.13.1 Hospital leadership implements, monitors, and takes action to improve the program for a culture of safety throughout the hospital.

119. Hospital accreditation in Belgium is managed by numerous private entities. In Flemish regions of Belgium both JCI and Q-mentum (NIAZ) are the most common accrediting bodies. NIAZ requires the use of HSPSC to assess PSC and inform improvement activities within each four year accreditation period. French speaking regions of Belgium primarily use HAS (Haute Autorité de Santé) and Accreditation Canada International (ACI) for accreditation purposes, both of which also include standards related to PSC.

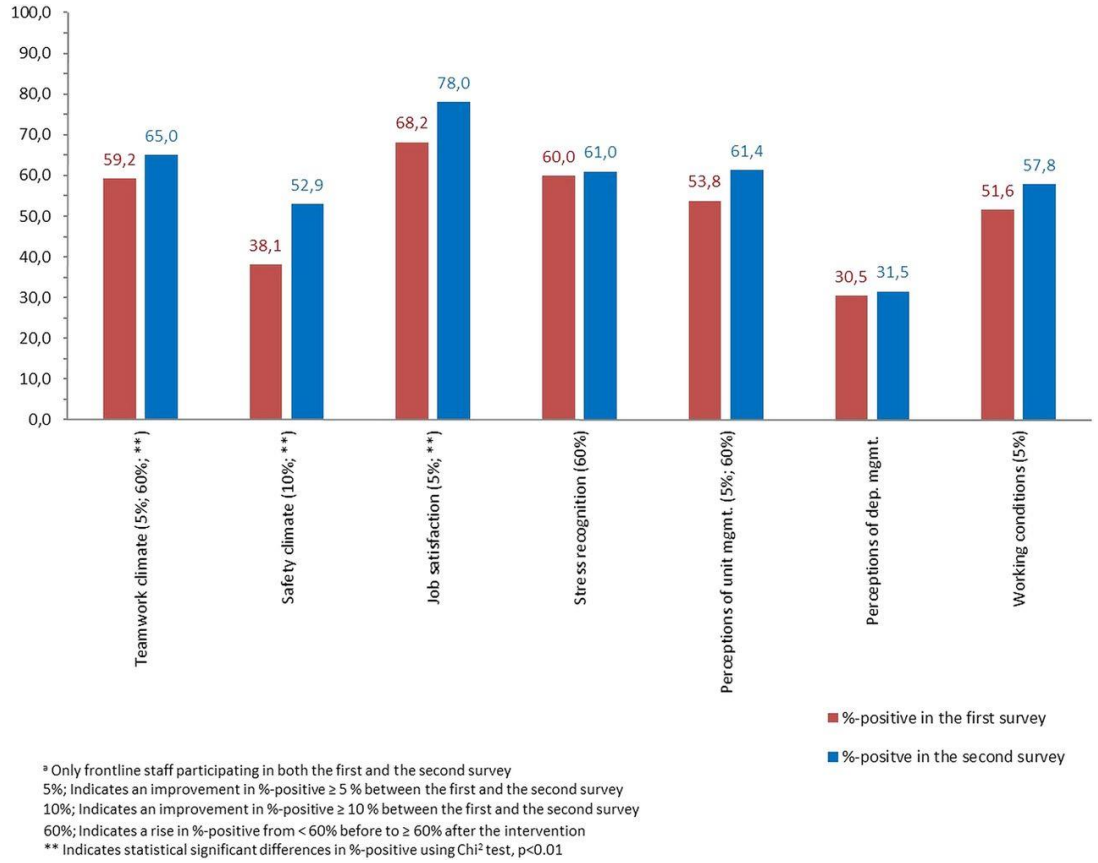
120. Australia does not have specific requirements for PSC measurement, but the National Safety and Quality Health Service (NSQHS) Standards does include general language regarding leadership's responsibility for developing a culture of safety and quality improvement (ACSQHC, 2019[123]).

3.6.2. Use of PSC measures for learning and improvement

121. The most common usage of PSC measures are for the purposes of learning and improvement, primarily within hospitals, at the organisational or clinical level. There are numerous applications of PSC measurement for learning and improvement purposes, and research is beginning to capture the impact of various interventions to improve PSC in the clinical environment. There is also thought that measuring PSC can lead to a Hawthorn Effect, whereas by studying PSC it is improved almost by default, as the act of measurement signals leaderships commitment to improving culture.

122. PSC have been used for benchmarking purposes, allowing hospitals and other care settings to compare themselves to other institutions, in order to give management context for understanding the results of PSC measurements. A recent study of a Danish psychiatric department evaluated staff perceptions of PSC before and after an intervention to enhance knowledge and training skills among leaders. Leaders were exposed to a five modals of training, including information on (1) leadership as profession and as a subject, (2) situational leadership and coaching, (3) managing communication, conflicts and change, (4) motivation, development and improvement, and (5) leading groups and teams. (Kristensen et al., 2016[124]). The before-and after-study findings imply that strengthening the leadership can lead to significant improvements in PSC (see Figure 3.9).

Figure 3.9. Proportion of stable frontline staff with positive attitudes (% positive) per Danish version of the Safety Attitudes Questionnaire (SAQ-DK) dimension (N=223).



Source: (Kristensen et al., 2016[124])

123. In Japan, hospital directors and patient safety officers are required to attend trainings that include teaching on PSC (Taneda, 2019[125]). Other work from the King's Fund in the UK, in conjunction with NHS Improvement, is developing a series of resources that will support clinicians and care providers to diagnose their cultural issues, develop leadership capacities, and implement strategies to address existing challenges and implement improvements (Kings Fund, 2019[126]).

124. Recent work in the United Kingdom examined maternal and neonatal services across England 87 trusts have carried out safety culture surveys through a partnership between the Maternal and Neonatal Health Safety Collaborative and the NHS (NHS Improvement, 2019[127]). Interestingly, not all of the trusts who participated in the exercise used the same tool. Specifically:

- Seventy-six of the trusts used the SCORE (Safety, Communication, Organisational Reliability and Engagement) survey.
- Ten trusts undertook their survey using the SAQ (Safety Attitudes Questionnaire) and two domains of the HSPSC (Hospital Survey on Patient Safety Culture).
- One trust used the MaPSaF (Manchester Patient Safety Framework).

125. The study found that there was significant variation in the way that staff perceived safety culture, which was not associated by the size and location of the trust. The report includes a number of recommended actions to assist maternity units in improving the different domains of PSC.

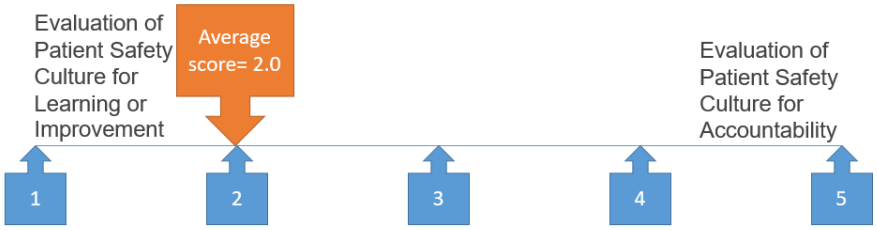
126. In the United States, hospitals are able HSPSC data to central databases on a voluntary basis. This data is then used for benchmarking purposes, as individual hospitals can compare their data to national averages (AHRQ, 2019[116]). The use of the HSPSC data and submission of data to the database was encouraged under the Medicare Access and CHIP Reauthorization Act of 2015, under the EHR Incentive Program, but data was not used for accountability purposes.

3.6.3. Governance approaches to PSC measurement

127. A final approach for implementing PSC measurement, is through regulation or governance structures that require or encourage it. Currently, governance approaches are not common mechanisms for implementing PSC measurement or improvement initiatives. However, in some cases, they have been implemented. In Norway, the Ministry of health and care services requires that at least 60% of clinical units in all hospital trusts have a "mature safety climate", according to a specified definition.

128. Overall, countries indicated that the overall approach to PSC measurement in their countries fell more on the side of evaluation for the purposes of learning and improvement than for accountability purposes (see Figure 3.10).

Figure 3.10. Overall, how would you characterize the approach taken in your country with regard to the following dimensions?



Note: n=21 respondent countries
Source: OECD Survey on Patient Safety Culture Measurement, 2019

129. In some cases, the regulatory environment can be seen as a barrier to establishing a strong PSC. Some patient safety experts believe that high levels of regulation leads organisations to implement a tick the box approach to safety, emblematic of a “bureaucratic safety culture” (Waterson, 2014[11]).

3.7. Planned future PSC measurement activities in OECD countries

130. In response to the survey question “Does your country have plans to expand on existing activities (or begin new activities) related to the collection and use of patient safety culture measures?,” 18 of 23 responding countries (78%) indicated yes—highlighting significant international interest in the expansion of work on PSC measurement across surveyed countries.

131. For example, several countries are currently developing concrete plans to expand activities related to PSC measurement.

- The United Kingdom (UK) is exploring the possible introduction of proxy indicators for problematic cultures, such as levels of staff suspension and of anonymous incident reporting.
- In 2018, Ireland’s Department of Health and the Health Service Executive commenced work to scope how best to conduct, process and use a PSC Survey for the Irish health service.

- PSC is part of Sweden's upcoming National Action Plan for Patient Safety, which is expected to be released in the first part of 2020.
- Turkey has noted that the HSPSC has been translated into Turkish, and that the Ministry of Health plans to implement the survey to hospital managers and employees through a web-based online system at the national level.
- In Finland, though PSC is not measured at national level, it is a key aspect of the previous two Finish National Patient Safety Strategies (2009-2014) and (2017-2021) and measurement of PSC is highly recommended in all health care organisations.
- In Australia, there is interest in including this measure in public reporting in the future. The ACSQHC is leading a project to develop national public reporting standards of safety and quality in health care across public and private hospitals.
- Slovenia launched SenSys in January 2018, a program to establish the national patient safety incident system, initiated with the technical support provided by the European Commission's Structural Reform Support Service and the Danish Patient Safety Authority to support the creation of a patient safety incident reporting and learning system (Zupančič, n.d.[128]). The project includes three main objectives: preparation of the legal basis for the system, implementation of a web-based reporting and learning platform, and the development of a PSC indicator. Slovenia has indicated that a national study of PSC is planned for 2020.
- The Norwegian Directorate of Health is developing a PSC quality indicator for use in public reporting across all levels of care. The 2019 Letter of Intent from Ministry of Health to The Regional Health Authorities, includes a statement of the indicator as, "the proportion of" units with a mature safety climate "(cf. definition in the patient safety program) at each health enterprise shall be at least 60 per cent" (Helse Sør-Øst RHF, 2019[129]) The Directorate of Health will start collecting data beginning in 2020 and publish the first results in summer 2020. The definitions that fall under the national quality indicator are:
    - Percentage of units where 60% or more employees score 75 or higher on factor scores for Safety Climate.
    - Percentage of units where 60% or more employees score 75 or higher on factor scores for Team Work Climate
    - Percentage of units where 80% or more employees score 75 or higher on factor scores for Safety Climate.
    - Percentage of units where 80% or more employees score 75 or higher on factor scores for Team Work Climate
    - Factor is a set of questions used to measure organisational climate within a topic.
    - Factor score scores are calculated using the following formula: (Average of result for questions belonging to the factor - 1)* 25

3.8. Additional considerations for international measurement of PSC

3.8.1. Culture differences in interpretation of PSC items

132. Research examining responses to the HSPSC in the Netherlands, Chinese Taipei, and the United States found consistencies and differences in question responses between countries. For example, 'teamwork within units' was strong and 'handoffs and transitions' weak in participating hospitals in all three countries. However, in general, US respondents gave a more positive response on the safety culture dimensions, as well as the overall safety grade, as compared to those from the Netherlands and

Chinese Taipei. Within the US, there was more variation between hospitals than was found in the other two countries. Finally, respondents from the Netherlands gave lower scores on 'organisational learning management support' and higher scores for 'non-punitive response to error' than respondents from other countries. Differences in the interpretation of survey questions access countries and processional subcultures is not exclusive to measures of PSC.

3.8.2. Appropriate translation and validation of tools

133. The availability of appropriately translated and validated tools specific to countries and settings is of significant importance to the comparability of PSC across countries and settings. Tools should be translated to capture the intended meaning of the questions, and validated to ensure that the items are applicable to the setting in which they are being administered.

3.8.3. Ability to act on the results of PSC measurement

134. A concern noted by several countries during the course of the interviews was the lack of sensitivity of existing tools, and the limited ability of hospital systems to enact change at the national or regional level. Even so, there is a growing research body of interventions to address and improve PSC in health care environments. A 2013 review identified 33 studies examining interventions to improve safety culture, finding that while most of the studies reported improved safety culture or patient outcomes, the measured outcomes were heterogeneous and the study quality was low. (Weaver et al., 2013[130]).

3.8.4. New version of HSPSC

135. While a significant number of countries currently use the HSPSC, AHRQ has developed a new version of the tool incorporating significant changes. In 2019, AHRQ released a new version, of HSPSC which includes only 40 survey items (compared to the original 51 items in the first version). From the previous version, 21 items were dropped, 25 were renamed, and 10 new items were added to the second version of HSPSC.

3.9. Chapter Conclusions

136. PSC measures are widely used across OECD countries. Many countries have used PSC measures in their national health systems (including Austria, Belgium, Iceland, Luxembourg, Portugal, Spain, Sweden, and the United Kingdom) or regional context (including Australia, Austria, Canada, Denmark, Spain, Sweden, and the United Kingdom). **20, of 24, surveyed countries use at least one tool broadly within their health system**. Most countries now widely use the same instruments to evaluate PSC, including the Safety Attitudes Questionnaire (SAQ) and the Hospital Survey on Patient Safety Culture (HSPSC), with the majority of countries (n=15) using primarily the HSPSC to track and evaluate PSC. The majority of PSC assessments to date have occurred in the hospital setting, surveying hospital staff on an ad-hoc basis. PSC measures are primarily used to inform internal learning and improvement, and not for accountability purposes, though some countries do use these measures for that purpose. Accreditation is one commonly used mechanism for encouraging use PSC measures, primarily at the organisational level.

137. PSC measurement is a topical, and significant priority for OECD countries. Many country health systems see improving PSC as a key building block for improving patient safety and quality of care. A significant number of countries mention PSC as a key component of their national patient safety strategy (or similar document).**Over 75% of surveyed countries (18 of 23) indicated that there were plans in their country to initiate or expand existing work on PSC**. Overall, measurement of PSC is prevalent across OECD countries, thought the application, purpose, and tools vary across countries.

4. The Path Forward

138. PSC has emerged from the clinic and hospital level, onto the agendas of international organisations and expert groups. There are now numerous calls from international groups and organisations to recognise the importance of PSC as an essential aspect of health care quality and improvement. A report published by the OECD in 2017, on the economics of patient safety, authors found that interventions related to 'building a positive safety culture' were rated by experts as being one of the most high impact interventions to reduce adverse events (Slawomirski, Auraaen and Klazinga, 2017[131]). The findings of this report note that PSC is critical, noting that organisational-level initiatives such as clinical governance frameworks, patient–engagement and building a positive safety culture are essential aspects of an integrated patient safety strategy.

139. In 2019, participants at the Global Seminar program Moving Measurement into Action, hosted by the Institute for Healthcare improvement and the Salzburg Global Seminar, resulted in the eight global principles for the measurement of patient safety (IHI, Salzburg Global Seminar, 2019[62]). These principles note that measures should be used to collect and share knowledge that is used for improvement. Included in these recommendations is a specific call to measure and improve PSC, included below:

> ***Stakeholders must intentionally foster a culture that is safe and just to fully optimize the value of measurement.*** *All leaders must invest in and commit to eliminating cultures of fear and blame and replacing them with cultures that are just, welcoming, and nurturing of curiosity and innovation. Culture should be measured consistently and in a way that is transparent and promotes action and improvement.*

140. Similarly, a European consensus statement issued by a number of clinician and patient groups on perioperative safety in 2020, building on the 2010 Helsinki Declaration on Patient Safety in Anaesthesiology, notes that maintaining an organisational culture of patient safety to improve perioperative health outcomes remains an ongoing challenge. (ESA, 2020[132]). Work from the European Observatory on Health Systems and Policies calls for policy makers to focus on PSC as part of quality improvement strategies, recommending that countries adopt patient safety strategies based on a systems perspective—meaning that efforts to focus on PSC should start at the national level (Busse et al., 2019[133])

141. Finally, work from the OECD developed for the 5th Patient Safety Ministerial Summit in Montreux, in 2020, notes that political leadership and safety culture are key elements for reducing harm, noting that effective patient safety governance can only be sustained if a culture that prioritises safety is fostered at all levels of health care governance (OECD, 2020[134])

142. While the importance of PSC has been made clear by a number of key reports and institutions, significant improvements require a concerted effort by health care workers at all levels of the health system. Improving culture is not easy, and requires a concerted effort, appropriate resources, and the commitment of leadership. Once positive PSCs are established, as living environments, they must be nurtured and maintained.

4.1. Report findings

The importance of PSC is now widely recognized at all levels of health care

143. The importance of PSC is something that many health systems now foster from both the ground up, and the top down. From individual bed units, to national level policies or requirements, many policy

makers, health care managers, and care providers are all increasingly recognising the importance of PSC in ensuring high-quality, safe health care. A growing research body has found that PSC is associated with numerous outcomes, including improved health outcomes, improved patient experience, and organisational productivity and staff satisfaction. Strengthening PSC means ensuring an environment of trust and a shared responsibility for patient safety, as a common value and institutional goal. Understanding PSC using measurement—and combined with Patient Safety Indicators and other outcome and process measures—can provide a comprehensive view of the overall "health" of the health care system.

144. OECD countries now have substantial efforts underway to measure and understand the current status of PSC in their health systems. Many countries have used PSC measures in their national health systems (including Austria, Belgium, Iceland, Luxembourg, Portugal, Spain, Sweden, and the United Kingdom) or regional context (including Australia, Austria, Canada, Denmark, Spain, Sweden, and the United Kingdom). **20, of 24, surveyed countries use at least one tool broadly within their health system**. Most countries now widely use the same instruments to evaluate PSC, including the Safety Attitudes Questionnaire (SAQ) and the Hospital Survey on Patient Safety Culture (HSPSC), with the majority of countries (n=15) using primarily the HSPSC to track and evaluate PSC. The majority of PSC assessments to date have occurred in the hospital setting, surveying hospital staff on an ad-hoc basis. PSC measures are primarily reported to be used to inform internal learning and improvement, and not for accountability purposes, though some countries do use these measures for that purpose. Accreditation is one commonly used mechanism for encouraging use PSC measures, primarily at the organisational level.

The appetite for expanding international learning and to expand efforts to measure PSC is significant

145. PSC measurement is a topical, and significant priority for OECD countries. Many country health systems see improving PSC as a key building block for improving patient safety and quality of care. The findings from the OECD Survey on Patient Safety Culture Measurement and subsequent country interviews find that there is already a substantial number of national, regional, and organisational activities occurring in countries related to PSC measurement. In addition to significant existing programs, there is enthusiasm for the topic of PSC and many countries have plans to expand efforts in this area. A significant number of countries mention PSC as a key component of their national patient safety strategy (or similar document).**Over 75% of surveyed countries (18 of 23) indicated that there were plans in their country to initiate or expand existing work on PSC**. Overall, measurement of PSC is prevalent across OECD countries, thought the application, purpose, and tools vary across countries.

4.2. Recommendations

Inadequate PSC has been associated with poor patient and staffing outcomes and should be addressed at all levels of health system governance

146. While the types of adverse events experienced by patients may differ in type and frequency by level of care, the general drivers of adverse events are common across settings and include inadequate organisational culture (see Table 4.1). Research has found linkages between patient outcomes and safety culture, finding positive linkages with good safety culture and reduced readmissions, length of stay, and medication errors. (Health Foundation, 2011[31]). PSC of health care institutions can have an impact on how patients experience their health care. As with health outcomes, there is a growing body of literature demonstrating the empirical relationship between PSC and patients' experiences of care in the health care system.

Table 4.1. Adverse events may differ between care settings

	Adverse event, specific to level of care	General drivers of adverse events independent of level of care
Primary care	Adverse drug events/ medication errors; diagnostic error/delayed diagnosis.	Lack of communication and information, lack of skills/knowledge, inadequate organisational culture, misaligned incentives.
Long-term care	Adverse drug events, pressure injury, falls	
Hospital care	Health care-associated infections, VTE, adverse drug events, pressure injury, wrong site surgery.	

Source: (Slawomirski, Auraaen and Klazinga, 2017[131])

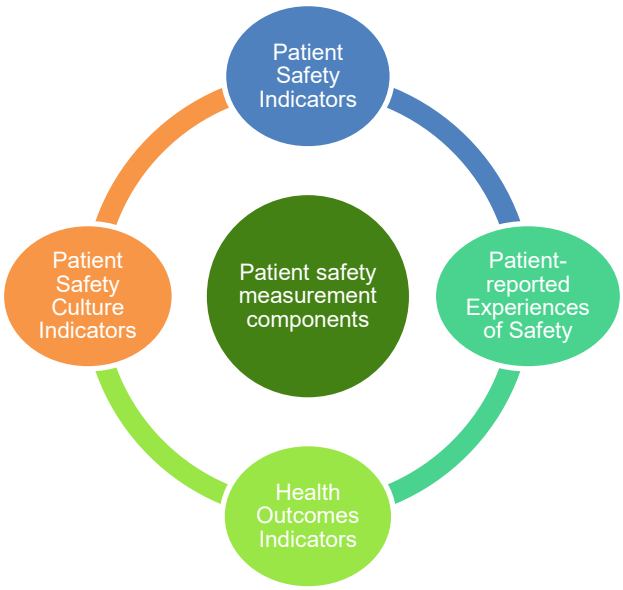
147. Commitment to PSC on the part of leadership and management is crucial. While errors leading to patient harm appear at the operational level, more global organisational factors in the background play a vital role and are, in turn, greatly influenced by management and leadership (Flin and Yule, 2004[14]). Leaders play a key role in driving the safety culture of an organisation by setting examples, as well as leveraging rewards and punishments (Waterson, 2014[11]). Initiatives to improve PSC often involve health care institutions as a whole and in order to coherently and successfully implement them, management needs to cooperate across different organisational levels.

148. Policy makers and health care leaders can act as catalysts for improving PSC and implementing policies to improve clinical risk management. This points to the great potential of interventions on a leadership level, but also to the need for instruments that deliver reliable information about the state of PSC in specific health care units. Inadequate management has been found to contribute to adverse events, for example by insufficient support for error reporting, a lack of response to staff that reports safety vulnerabilities or leaving staff burnout unaddressed (Sfantou et al., 2017[21]).

PSC should be measured and used in the context of other measures of health system performance

149. The data collection currently underway to understand the current state of patient safety is useful, but not sufficient. Measurement of PSC is important because it helps health care organisations identify strengths, weaknesses and gaps, and areas for improvement. Without measurement PSC, it becomes virtually impossible to detect and reinforce beneficial trends that enhance patient safety. Measures of PSIs should be supplemented with outcome measures, as well as structural and environmental measures that assess the PSC of health delivery systems. It is imperative to understand what the PSC is in a given health care environment, in order to understand why the culture is that way, and to be able to act on it effectively.

Figure 4.1. Key Measurement Components of Patient Safety for Hospital Care



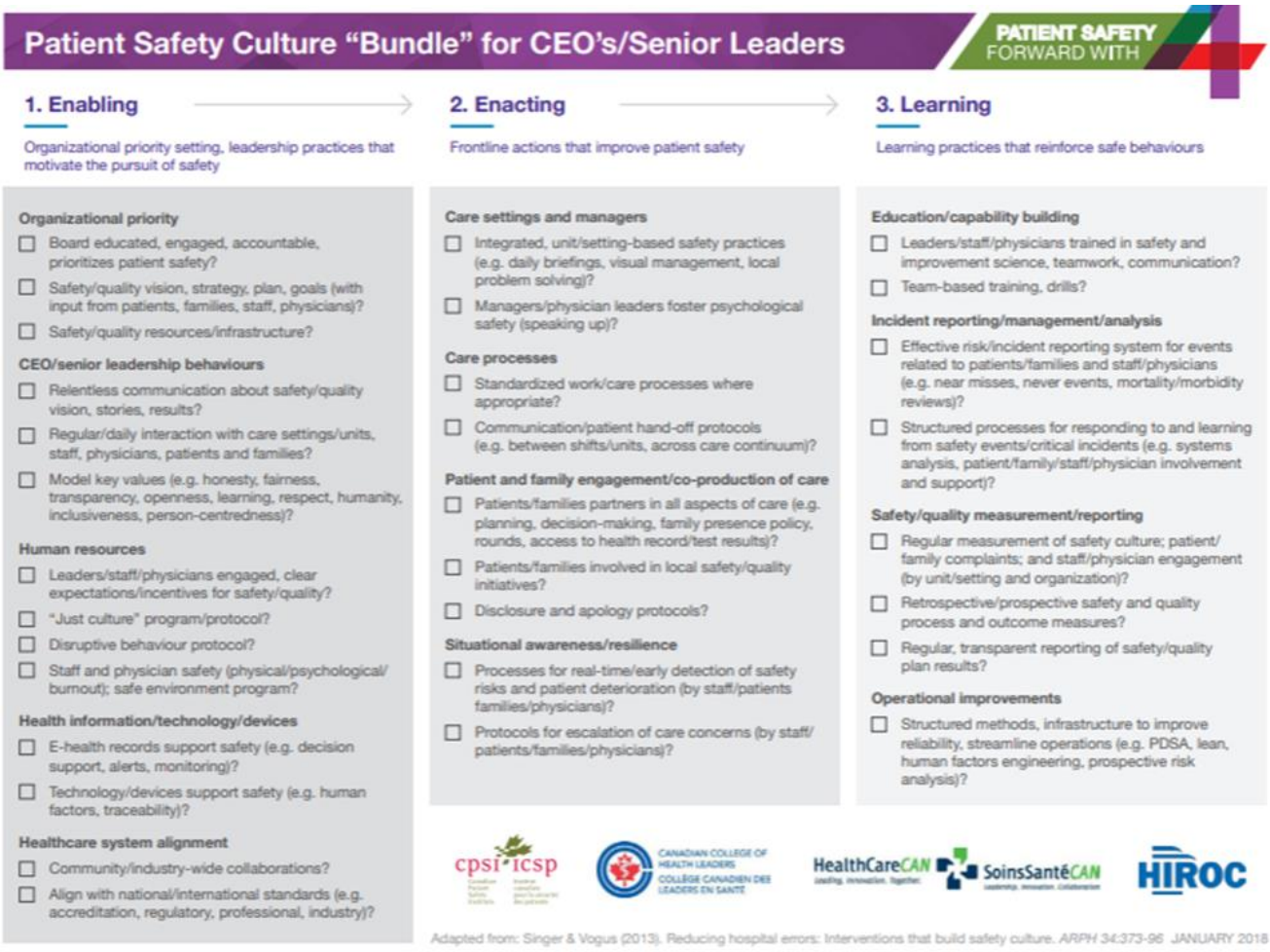
Source: Authors

PSC is an essential part of learning, safe, and high quality health systems, and should be used to inform organisational change.

150. Policy makers are moving their focus to risk mitigation, learning-based health systems, and health care environment design that takes human factors into account. **A culture of patient safety is a fundamental component of these efforts.** Systematic measurement of PSC and follow up evaluation of the results is essential for learning, improvement, benchmarking, and comparison. Crucially, measurement is not only beneficial for detecting safety deficiencies, but also for highlighting the relationship between the PSC and the clinical practices, evaluating settings with strong PSCs, where safe care is delivered consistently over time (OECD, 2018[44]). Recognizing the type of environment and the conditions conducive to good patient safety is pivotal for a proactive management approach to health care improvement.

151. However, more needs to be done to understand the tools available for health care leadership and staff to effectively maintain and improve PSC, though available resources are increasing. The product of a working group led by CPSI, published in 2020, created a "bundle" of evidence-based practices for implementation by senior health care leadership to establish and sustain high-quality health care delivery and PSC (see Figure 4.2) (Armutlu et al., 2020[16]). While this is an excellent example of resources that are available to health care leaders, more still needs to be done to understand and influence the drivers of PSC in a systematic way, one that is prioritized in all levels of health care leadership.

Figure 4.2. Patient safety culture bundle elements



Source: (Armutlu et al., 2020[16])

There are opportunities for countries to learn from each other and benchmark performance on PSC

152. Results of the 2019 OECD survey on PSC and subsequent interviews with country representatives find that there has been convergence around numerous aspects of PSC measurement. Most efforts to date have occurred in the hospital setting, surveying hospital staff on an ad-hoc basis. Most efforts are used to inform internal learning and improvement, and not for accountability purposes, though that is a venue that some countries have explored. Accreditation is one commonly used mechanism for encouraging use PSC measures, primarily at the organisational level. Finally, there is significant convergence around the use of the HSPSC tool for measurement, though it does not have complete coverage across participating countries.

153. Differences in methods for calculating and presenting results for PSC can lead to limited comparability between sites, regions, and even countries. Consistent methodological leadership could provide standards for the application, collection, and dissemination of survey results. As such, there is a need for methodological leadership in the area of PSC measurement. Based on these findings, it may be feasible to collect information from numerous countries on a one-off or semi-regular basis. There appear to be significant opportunities for future benchmarking of PSC in the international context.

154. Building on previous work commissioned by the European Commission and other international initiative working to promote harmonization in the evaluation of PSC such as the WHO's High 5s Project, the establishment of an international collaborative network on PSC measurement would bring together interested parties to share experiences and best practices in PSC measurement (Leotsakos et al., 2014[135]). Researchers have suggested that international networks on Patient Safety Culture could potentially mirror those that have been developed for road safety (Waterson et al., 2019[69]). The European Road Safety Observatory, for example, has developed a set of collaborative networks that have created a platform for exchanging data and 'good practice', as well as affording benchmarking (ERSO, 2019[136]).

The future of PSC must also include patient perspectives

155. Feedback from international experts has noted that patient involvement is a growing priority in assessments of patient safety culture. There is significant potential for patients to provide meaningful feedback on their experiences of safety in health care settings, including their experiences of safety culture and its domains. In order to develop a more comprehensive approach to assessing patient safety across health systems and health care providers, a growing number of OECD countries use other data sources--such as information reported by patients themselves--to complement PSIs based on administrative data and PSC data collected from providers themselves. Patient generated data can be used to prevent, evaluate and manage patient safety incidents. As such, a number of OECD countries have started developing surveys to measure and monitor patient-reported experience of safety.

156. Given the policy priority of patient safety globally and the fact that the OECD has been leading the work on international reporting of patient-reported experience measures (PREMs) for over a decade, the European Commission has commissioned the OECD to develop indicators on patient-reported safety indicators for international comparisons and reporting. These tools can be used to mirror PSC from the provider perspective, provide a more comprehensive view of patient safety from multiple perspectives, and provide additional feedback for practice improvement.

4.3. Creating a future where culture is central: Culture as a Cure

157. Strengthening PSC is a mechanism to improve patient safety outcomes and health system performance—it can be a cure for patient safety issues and adverse events. It can be a cure for poor communication, limited information exchange, inadequate support and processes that require improvement. Including measures of PSC in evaluation activities at all levels of health can ensure a comprehensive view of the status of patient safety, by linking culture, documented adverse events, and overall health outcomes. While creating and maintaining strong PSC is difficult, it can be achieved if individuals at all levels of the health system work together to ensure that care is provided in a learning system, one that fosters continuous improvement, accountability and patient safety. Improving patient safety culture is a cure, one that improves the well-being of patients and staff alike.

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Annex A. Individuals Interviewed to Inform this Work

Individual	Affiliation	Country
Patrick Waterson	Loughborough University	Subject Matter Expert
Laura Thorsteinsson	Directorate of Health	Iceland
Liane Ginsburg	York University	Subject Matter Expert
Ellen Catharina Deilkås	The Norwegian Directorate of Health	Norway
Paul Stonebrook	NHS England	England (UK)
Solvejg Kristensen	Aalborg University Hospital	Denmark
Marita Danielsson	County Council of Ostergotland	Sweden
Carla Veldkamp	Canisius-Wilhelmina Ziekenhuis (CWZ)	The Netherlands
Ken Taneda	National Institute of Public Health	Japan
Caren Ginsburg Elma Chowdhury	AHRQ	United States
Suzanna Henderson	Australian Commission on Safety and Quality in Health Care	Australia
Deirdre Hyland Rosarie Lynch	Department of Health	Ireland
Joann Sorra Naomi Yount Theresa Famolaro Limaya Atembina Jess Kirchner	West Stat	Subject Matter Experts
Yolanda Agra Varela	Ministerio de Sanidad, Consumo y Bienestar Social	Spain
Manuel Arriagada Figueroa	Ministerio de Salud	Chile
Karolina Olin	Turku University Hospital	Finland
Maria João Gaspar	Directorate-General of Health	Portugal

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