McMaster University | Health Forum

Rapid Evidence Profile

Identifying tools, metrics, and measures for physical, psychological, and/or cultural safety in healthcare settings

13 September 2024

[MHF product code: REP 79]

Context

- Government policymakers and health-system leaders continue to grapple with how best to address a range of health workforce challenges, including those that can diminish providers' experiences when delivering care to those who need it.
- One area of focus that is increasingly prioritized is ensuring health workers are practising in environments that are physically, psychologically, and culturally safe as part of broader efforts to support their health and well-being.
- In Canada and elsewhere, there continues to be variability and gaps in physical, psychological and cultural safety in healthcare learning and practice environments, which can negatively contribute to the health and well-being of health workers, as well as organizational performance and clinical outcomes.(1)
- To help advance their efforts to support progress in this area, the McMaster Health Forum was engaged by the Canadian Medical Association (CMA) in 2023 to prepare a rapid evidence profile (REP) that sought to summarize what is known – based on the best-available evidence and experiences from Canadian and international jurisdictions – about the frameworks available and interventions used to ensure health professionals and caregivers practise in environments that are physically, psychologically and culturally safe.
- This REP was requested to complement that work by focusing on better understanding what is known about the tools, metrics, and measures that can be used to understand the state of physical, psychological, and cultural safety in healthcare settings, as well as whether and how efforts to learn and improve are having their desired effects in these domains. Box 1 details the types of evidence and other types of information we drew on, and Box 2 provides an overview of our approach.
- To inform our work – including how we approached the development of search strategies and assessed identified tools, metrics and measures, evidence documents, and jurisdictional insights for inclusion in our analysis (see Appendix 1) – we adopted the definition of physical, psychological, and cultural safety used by the CMA in their physician wellness hub, which states that:
  - **physical safety** is characterized by an environment that identifies, minimizes, and mitigates harm, injury and illness, threats of harm or injury, or near harm or injury, which may be inflicted by a person, substance, object, hazard, environment, or occupational practice

Box 1: Evidence and other types of information

+ Global evidence drawn upon

Evidence syntheses selected based on relevance, quality, and recency of search

+ Forms of domestic evidence used

Evaluation

+ Other types of information used

Jurisdictional scan (13 Canadian jurisdictions plus seven countries including: AU, DE, NL, NZ, SE, UK, US)

*** Additional notable features**

Prepared with ongoing input from the requestors (which included subject-matter experts) to help focus the approach used, and with an 'all hands on deck' approach for the equivalent of six business days

- **psychological safety** is characterized by a climate of trust and respect in which people are comfortable working to their full scope of practice and potential, and hold the belief that teammates and leadership will support, and not embarrass or punish, a colleague for speaking up in the line of work
- **cultural safety** is characterized by acceptance and respectful engagement that recognizes unique individual identities, differences and preferences, and strives to address inherent power imbalances in the healthcare system, resulting in an environment free of racism and discrimination where people feel safe to be their authentic selves.

Question

- What is known from the best-available evidence and experiences from Canadian and international jurisdictions about the tools, metrics, and measures for physical, psychological and/or cultural safety in healthcare settings?

High-level summary of key findings

- We identified a total of 35 tools, metrics, and measures for physical, psychological, or cultural safety for inclusion in this REP (see Appendix 1 for a detailed description of the methodological approach for identifying the tools, metrics, and measures, Appendix 2 for the list and detailed summary of what is known about the included tools, metrics, and measures, and Appendix 3 for the list of those excluded after an initial round of eligibility assessments).
- We searched for and identified 13 relevant evidence documents (see Appendix 4) – of which nine were evidence syntheses and four were highly-relevant single studies – that evaluated the use of the tools included in the REP and conducted a jurisdictional scan of all 13 Canadian provinces and territories as well as seven international jurisdictions to identify insights about their use domestically and internationally (see Appendices 5 and 6). Box 2 provides a summary of our approach.
- Our analysis found that:
  - the landscape of physical, psychological, and cultural safety assessment in healthcare settings is diverse and complex, with many tools, metrics, and measures available but with only nine showing promise based on evidence or insights from jurisdictional scans

Box 2: Approach and supporting materials

At the beginning of this rapid evidence profile and throughout its development, we engaged subject matter experts to help us scope the question and ensure relevant context is taken into account in the summary of the evidence and jurisdictional insights.

We identified evidence addressing the question by searching PubMed, Health Systems Evidence, and Social Systems Evidence. Several rounds of searches were conducted between June and August 2024. The search strategies used are included in Appendix 1. In contrast to synthesis methods that provide an in-depth understanding of the evidence, this profile focuses on providing an overview and key insights from relevant documents.

We searched for full evidence syntheses (or synthesis-derived products such as overviews of evidence syntheses) and protocols for evidence syntheses, as well as highly relevant single studies when no syntheses were identified.

We appraised the methodological quality of evidence syntheses that were deemed to be highly relevant using AMSTAR. AMSTAR rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. The AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to evidence syntheses pertaining to delivery, financial, or governance arrangements within health systems or to broader social systems.

A separate appendix document includes:
1) methodological details (Appendix 1)
2) details about the tools, metrics, and measures included in the analysis (Appendix 2), those excluded during eligibility assessments (Appendix 3), and each identified evidence document (Appendix 4)
3) details from jurisdictional scans (Appendix 5 and 6)
4) other relevant framework documents that were initially deemed eligible during the review (Appendix 7)
5) references (Appendix 8).

This rapid evidence profile was prepared in the equivalent of six days of a 'full court press' by all involved staff.

    - there is an uneven distribution of tools, metrics, and measures across *focus areas* with psychological safety being particularly well-served, and physical safety being relatively poorly served by existing tools, metrics, and measures that we identified and included in our final analysis (however, as the list of tools, metrics, and measures that ended up being excluded from our analysis in Appendix 3 shows, we did identify many that addressed physical safety but deemed them to be too narrowly focused and as a result excluded them during subsequent rounds of eligibility assessments in collaboration with subject matter experts)
    - there is also an uneven distribution in terms of the *healthcare settings* that are the focus of the tools, metrics, or measures (or from which we have evidence or jurisdictional insights to glean an understanding about their application and use) with hospital environments being focused on in many instances, and with primary care rarely being the focus
    - there are common themes across all the included the tools, metrics, and measures including the multidimensional nature of physical, psychological, and cultural safety, the importance of organizational culture, and the need for a comprehensive, systemic approach to address all aspects of safety.
- Only eight out of 35 tools were found to have evidence support, with quality varying significantly across systematic reviews and single studies and the evidence ranging from high-quality systematic reviews to individual studies
- The most well-supported tools, based on evidence syntheses, include:
    - Awareness of Cultural Safety Scale-Revised (ACSS-R)
    - Cultural Self-Efficacy Scale (CSES)
    - Perceived Stress Scale (PSS)
    - Practice Environment Scale of the Nursing Work Index (PES-NWI)
    - Safety Attitudes Questionnaire (SAQ)
- Second Victim Experience and Support Tool (SVEST), the Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS), and Short Questionnaire for Workplace Analysis (KFZA) were supported by the existence of single studies that evaluated their use.
- Based on our scan of Canadian provinces/territories and international jurisdictions, we identified nine different tools from our analysis (i.e., 'included list') that were applied within healthcare organizations to better understand physical, psychological, and cultural safety:
    - Health Standards Organization (HSO) Workforce Survey on Well-Being, Quality and Safety (Canada-wide)
    - Impact of Event Scale – Revised (IES-R) (Quebec, Germany, Sweden)
    - Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS) (United States)
    - Perceived Stress Scale (PSS) (Germany, Netherlands)
    - Psychological Safety Measurement (Edmondson) (Germany)
    - Safety Attitudes Questionnaire (SAQ) (Prince Edward Island, Australia, United Kingdom, United States)
    - Safety Climate Survey (SCS) (New Zealand)
    - Second Victim Experience and Support Tool (SVEST) (United States)
    - Short Questionnaire for Workplace Analysis (KFZA) (Germany).

  Many of these (e.g., PSS, SAQ, SVEST, LGBT-DOCSS, KFZA) have shown promise as measurement instruments for assessing and/or improving a culture of safety within the healthcare workforce because of widespread adoption.
- In addition to the nine tools applied in these jurisdictions, our scans revealed an additional 10 tools (i.e., seven from the Canadian provinces/territories and three from international countries) that were not originally included in our analysis but found to have been used within healthcare organizations to better understand physical, psychological, and cultural safety.
- Overall, our searches for evidence documents and insights from Canadian and international jurisdictions identified 12 tools that were considered to be promising (see Table 1).

Framework to organize what we looked for

While our typical approach to preparing a REP starts with developing a mutually exclusive and collectively exhaustive (MECE) list to provide a framework that helps inform our methodological approach as well as how we organize our findings, the nature of the question that was the focus of this REP meant that we organized our findings in the following ways:

- by the tools, metrics or measures identified (see row headers in Appendix 2 as well as Table 1 below)
- by the dimensions of interest for each of the tools, such as topic areas where it is being applied (e.g., physical, psychological, cultural safety, or multiple areas of focus).

Overview of what we found

We identified a total of 35 tools, metrics, and measures – of which seven focused on multiple areas of safety, two focused physical safety, 16 focused on psychological safety and 10 focused on cultural safety – that we used to focus our searches for evidence documents and our jurisdictional scan (see Appendix 1 for details about our methods for identifying the tools, Appendix 2 for the full list of included tools and what was learned about them, and Appendix 3 for the list of tools, metrics, and measures that were identified but ultimately excluded from our analysis).

- Our targeted searches for evidence syntheses and highly relevant single studies that focus on evaluating one or more of the 35 tools, metrics, or measures yielded nine relevant evidence syntheses and four single studies (see Appendix 4).
- We conducted a jurisdictional scan to identify whether there are documented experiences with using any of the 35 identified tools, metrics, and measures in Canadian provincial/territorial jurisdictions (see Appendix 5), and in seven international jurisdictions including Australia, Germany, the Netherlands, New Zealand, Sweden, the United Kingdom, and the United States (see Appendix 6). The jurisdictional scan surfaced an additional 10 tools that we assessed and gained insights about.

The landscape of safety assessment in healthcare is diverse and complex, encompassing various aspects of physical, psychological, and cultural safety. While this document examines 35 different tools (which were complemented by the additional 10 identified through the jurisdictional scans), definitively identifying those with clear advantages based on both reliability, validity, and jurisdictional application is challenging. Nevertheless, 12 tools – each of which is detailed in Table 1 – show promise based on strong evidence and/or insights from jurisdictional scans that have surfaced experiences with their use.

Insights about psychometric properties

Five of the 12 tools stand out given they have robust psychometric properties.

- The **Safety Attitudes Questionnaire (SAQ)** stands out for its robust psychometric properties and strong reliability.(2) Focusing on psychological safety, it offers broad applicability across various healthcare workers and settings. However, specific information about its application in different jurisdictions is lacking.
- In the realm of cultural safety, the **Cultural Self-Efficacy Scale (CSES)** demonstrates high internal consistency and reliability and established content validity.(3) Designed for community health nurses, it provides a targeted approach to assessing cultural competence in nursing practice. Yet, like the SAQ, details about its practical application across jurisdictions are not provided.
- The **Second Victim Experience and Support Tool (SVEST)** also shows promise, demonstrating good internal consistency reliability.(4) It's described as both reliable and valid for identifying and supporting healthcare providers affected by patient safety incidents. With good internal consistency across its subscales, it offers a nuanced approach to identifying and supporting affected health professionals. Its focus on psychological safety and broad applicability make it potentially valuable across various healthcare settings, though specific applications are not detailed.
- The **Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS)** has demonstrated solid factor structure, reliability, and validity, positioning it as a valuable tool for research in LGBT healthcare competencies.
- The **Perceived Stress Scale (PSS)** stands out for its versatility and reliability across diverse populations. Its robust psychometric properties in both Spanish and English versions, coupled with its reliability across various Latino subgroups in the U.S., make it a go-to instrument for stress assessment in multicultural healthcare settings.

It's important to note that for many tools described, there's a gap in information regarding either reliability and validity evidence or insights from jurisdictional application. This highlights the need for more comprehensive research and reporting on these tools' practical applications across various healthcare contexts.

Based on the documents included in this analysis, we are not able to make a definitive statement about whether designs that measure one area of focus versus multiple areas led to better tools. Comparative studies are needed to evaluate the relative effectiveness of single-focus versus multi-focus safety assessment tools in healthcare settings, to determine if one design approach consistently yields more successful or useful instruments.

Insights about areas and settings of focus

The diversity and specificity of the 35 tools examined underscore the complexity of safety in healthcare environments. These tools span a wide range of focus areas, reflecting the multifaceted nature of safety in healthcare settings. Two focused primarily on physical safety (e.g., CEMB Lab Risk Survey, HART), 16 focused primarily on psychological safety (e.g., SAQ, Edmondson's Psychological Safety Measurement, SVEST) and 10 focused primarily on cultural safety (e.g., CSES, ACSS, TACCT). Some instruments, like the HSO Global Workforce Survey, take a broader approach, covering multiple aspects of safety. Notably, seven tools, metrics, and measures addressed multiple areas of focus across safety dimensions simultaneously (i.e., one or more of physical, psychological, and cultural safety) highlighting the interconnected nature of these aspects.

Psychological safety emerges as the domain with the most robust selection of established and validated tools. Instruments like the SAQ, JCQ, PSS, and IES-R offer comprehensive assessments of various aspects of psychological safety in the workplace. Cultural safety is also well-represented, with tools like the LGBT-DOCSS, CCSAQ, and CAS providing means to evaluate cultural competence and awareness (which are components that contribute to establishing culturally safe environments). In contrast, physical safety seems to have fewer comprehensive tools, with existing measures often focused on specific settings or assessment methods (see Appendix 3 for the list of excluded tools, metrics, and measures).

Some instruments, like the HSO Global Workforce Survey, take a broader approach, covering multiple aspects of safety. For instance, the PES-NWI encompasses elements of both physical and psychological safety, assessing factors such as staffing adequacy and nurse-physician relations. This integration reflects the complex interplay between different safety dimensions in healthcare settings.

The applicability of these tools varies across health professionals and settings. While some are designed for broad use across different types of healthcare workers (e.g., SAQ, SVEST), others are more specific (e.g., PES-NWI and CSES for nurses, TACCT for medical education). Similarly, some tools are applicable across various healthcare settings, while others are designed for specific environments (e.g., Safe Psychiatric Ward Battery, OTAS-D for operating rooms).

Regarding healthcare settings, hospital environments are the most well-served, with a rich array of instruments specifically designed for acute care settings. Primary care settings, however, appear to have fewer dedicated safety assessment tools, highlighting a significant gap given the crucial role of primary care in the overall healthcare system. The broader healthcare system is served by a range of tools applicable across various settings, but the uneven distribution of assessment instruments highlights opportunities for developing more targeted tools, particularly for primary care and other specific healthcare contexts.

These tools provide healthcare organizations with the means to quantify abstract concepts, identify areas for improvement, and track progress over time. However, it is important to note that their effectiveness relies on appropriate selection, implementation, and interpretation within specific healthcare contexts. The diversity of available instruments offers flexibility but also underscores the need for careful consideration when choosing and applying these tools in different healthcare environments.

Common themes that emerged across the tools, metrics, and measures included in the analysis

The analysis of the various tools, metrics, and measures revealed several common themes that are crucial for decision-makers in healthcare settings to consider:

- safety in healthcare is a multidimensional concept encompassing physical, psychological, and cultural aspects, as reflected in comprehensive tools like the HSO Global Workforce Survey
- organizational culture and a supportive environment play crucial roles in promoting safety, as emphasized by instruments such as the SAQ and the Organizational Culture Index (OCI)
- effective interprofessional dynamics and teamwork are significant contributors to safety, as highlighted by tools like the ICU nurse-physician questionnaire and the Observational Teamwork Assessment for Surgery (OTAS-D)
- individual healthcare providers need to develop cultural competence and engage in ongoing self-assessment and reflection, as emphasized by instruments such as the LGBT-DOCSS and the Anti-Racism Self-Assessment Tool.

These themes collectively suggest the need for a comprehensive, systemic approach to safety that addresses cultural, psychological, and interprofessional factors alongside traditional safety measures. Such an approach recognizes that safety is not just about physical hazards but also about creating an environment where all health professionals feel psychologically safe to voice concerns and where patients from diverse backgrounds feel respected and understood.
While many of the tools show promise in specific areas, there's a clear need for more comprehensive research on their application across various jurisdictions. This would provide a more robust assessment of their advantages and applicability in different healthcare contexts. The diversity of available tools reflects the complex nature of safety in healthcare settings, encompassing physical, psychological, and cultural dimensions across various professional roles and healthcare environments.

In conclusion, decision-makers should consider adopting a holistic view of safety that incorporates these diverse elements. By using a combination of these tools, healthcare organizations can gain a more comprehensive understanding of their safety climate and identify areas for improvement across multiple dimensions. This multifaceted approach to safety assessment and improvement aligns with the evolving understanding of healthcare as a complex system where patient outcomes are influenced by a wide range of interconnected factors.

Table 1: Summary of what can be said based on evidence and experiences from jurisdictions about tools, metrics, and measures for physical, psychological, and cultural safety

Name of tools, metrics, and measures for which evidence and/or experiences from Canadian and other jurisdictions were identified	Advantages based on the available evidence and experiences in Canadian and other jurisdictions	Considerations for its use in the Canadian context (including strategies to addressing barriers to its use)
Awareness of Cultural Safety Scale-Revised (ACSS-R)	• It is a reliable and valid measure of cultural safety • It can be used across various practice settings • It provides insights into cultural safety awareness levels among different health professionals (e.g., midwives in education settings vs. clinical settings)	• Consider aligning the ACSS-R with Canadian Indigenous health frameworks or adapting it to reflect specific Canadian Indigenous contexts • Regularly assess the tool's effectiveness in the Canadian context and make necessary adjustments
Cultural Self-Efficacy Scale (CSES)	• CSES assesses nurses' perceived self-efficacy in caring for culturally diverse populations • Increased cultural exposure was associated with improved self-efficacy scores, suggesting the scale can detect changes over time	• Modify the CSES to reflect the structure and practices of the Canadian healthcare system • Use CSES results to inform cultural competence training for practising nurses

Name of tools, metrics, and measures for which evidence and/or experiences from Canadian and other jurisdictions were identified	Advantages based on the available evidence and experiences in Canadian and other jurisdictions	Considerations for its use in the Canadian context (including strategies to addressing barriers to its use)
Health Standards Organization (HSO) Global Workforce Survey	• The HSO Global Workforce Survey provides a comprehensive assessment of work life quality and safety culture across 17 key healthcare workforce topic areas, which allows for a holistic view of workforce well-being and organizational climate • The survey has gone through validation processes to ensure its reliability and validity as a measurement tool for healthcare workforce experiences • As a standardized tool used across multiple healthcare organizations, it allows for benchmarking and comparisons between different settings • The survey results are designed to provide actionable data to support strategic and operational decision-making around workforce well-being and safety • While standardized, the survey can be adapted to specific healthcare settings and contexts as needed • This survey was used across Canada	• Ensure the survey is available in both English and French to be accessible across Canada and consider translations for other languages as needed for specific populations • Review and adapt survey questions as needed to ensure cultural appropriateness and relevance across diverse Canadian healthcare contexts
Impact of Event Scale – Revised (IES-R)	• The IES-R has demonstrated good internal consistency reliability, with alpha coefficients ranging from 0.87 to 0.94 for the total score and subscales • The scale has been translated and validated in multiple languages, including French, Chinese, Japanese, and German, indicating its potential for use in diverse cultural contexts • The IES-R can be used to measure change in post-traumatic stress disorder (PTSD) symptoms over time, making it valuable for assessing the impact of interventions. • The IES-R was used in Quebec, Canada, Germany, Sweden, and Netherlands	• Align the use of IES-R with ongoing mental health and trauma-informed care initiatives in Canadian healthcare • Establish Canadian norms and cut-off scores, as these may differ from other countries
Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS)	• The scale has demonstrated strong internal consistency reliability for the overall scale (α = 0.86) and subscales (α = 0.80 to 0.88), indicating it is a reliable measurement tool • The scale is designed for use across various health and mental health professions, making it versatile for different healthcare settings • The scale shows good two-week test-retest reliability (r = 0.87), indicating stability of measurements over time	• Align the implementation of the LGBT-DOCSS with other ongoing diversity, equity, and inclusion initiatives in Canadian healthcare organizations • Consider incorporating the scale into healthcare education curricula to build competency from early career stages

Name of tools, metrics, and measures for which evidence and/or experiences from Canadian and other jurisdictions were identified	Advantages based on the available evidence and experiences in Canadian and other jurisdictions	Considerations for its use in the Canadian context (including strategies to addressing barriers to its use)
	• The LGBT-DOCSS has been validated in both the U.S. and U.K., suggesting potential for use in diverse cultural context	• Offer resources and training opportunities specifically tailored to areas identified as needing improvement through the scale
Perceived Stress Scale (PSS)	• PSS is available in different lengths (14, 10, and 4 items), offering flexibility based on research needs and time constraints • Demonstrates good internal consistency reliability across diverse populations • Has been translated and validated in multiple languages and cultures • It was used in Germany, Netherlands, and Sweden	• Develop guidance on integrating PSS results into Canadian clinical practice and public health initiatives
Practice Environment Scale of the Nursing Work Index (PES-NWI)	• It has been widely used in multiple countries and is a reliable tool for measuring nursing practice environments • It was often used to examine associations with organizational, nurse, or patient outcomes	• Conduct Canadian-specific validation studies to ensure the tool's reliability and validity in the Canadian healthcare context • Use the tool to compare nursing practice environments across different provinces and territories, accounting for variations in healthcare delivery systems
Psychological Safety Measurement (Edmonson)	• The measure has been widely used and validated in various organizational settings • Its successful application in a cross-cultural context (Turkish immigrants in Germany) suggests potential for use in diverse populations	• Create guidance for interpreting results in the Canadian context, including benchmarks for different sectors or regions
Safety Attitudes Questionnaire (SAQ)	• The SAQ has demonstrated good reliability and validity across various healthcare settings • It has been extensively used and validated in healthcare settings both domestically and internationally • The survey has been successfully adapted for use in various healthcare contexts, including primary care and care homes • It was used in Australia, England, New Zealand, United Kingdom, and United States	• Develop modules addressing uniquely Canadian issues, such as safety in medical transport for remote communities • Incorporate questions addressing cultural safety, particularly for Indigenous patients and healthcare providers
Safety Climate Survey (SCS)	• The SCS has been selected as the preferred tool of choice in several jurisdictions and settings, indicating its credibility and widespread use • The SCS has demonstrated strong psychometric properties and extensive use in healthcare settings both domestically and internationally • The SCS has shown ability to detect changes in safety culture over time, making it useful for evaluating improvement initiatives	• Involve key stakeholders such as healthcare professional associations, unions, and provincial/territorial health authorities in the survey implementation process

Name of tools, metrics, and measures for which evidence and/or experiences from Canadian and other jurisdictions were identified	Advantages based on the available evidence and experiences in Canadian and other jurisdictions	Considerations for its use in the Canadian context (including strategies to addressing barriers to its use)
	• It was used in New Zealand, and in the United Kingdom (including England and Scotland)	
Second Victim Experience and Support Tool (SVEST)	• The SVEST demonstrates good internal consistency reliability, with Cronbach's alpha ranging from 0.61 to 0.87 for subscales • It includes various aspects including psychological distress, physical distress, colleague support, supervisor support, institutional support, non-work-related support, and professional self-efficacy • The SVEST was used in the United States	• Conduct validation studies across various Canadian healthcare contexts (e.g., hospitals, primary care, long-term care) to confirm
Short Questionnaire for Workplace Analysis (KFZA)	• The KFZA showed acceptable to good internal consistency reliability, with Cronbach's alpha ranging from 0.63 to 0.80 for subscales • The KFZA covers various aspects of work, including social support, cooperation, qualitative work demands, quantitative work demands, and workplace environment • The KFZA was used in Germany	• Conduct validation studies in various Canadian healthcare contexts (e.g., hospitals, long-term care facilities, community health centres) to ensure reliability and validity in these settings

Detailed summary of what we learned from the best-available evidence

Out of the 35 tools mentioned in Appendix 2, evidence documents were found for eight specific tools (see Appendix 4). However, it's important to note that some documents reviewed multiple tools simultaneously (see column one in Appendix 4), potentially covering aspects of additional tools not explicitly named. We identified nine evidence synthesis and four single studies covering various tools, metrics, and measures used in healthcare settings. The evidence consisted of a mix of high-quality evidence syntheses and single studies, with AMSTAR ratings ranging from 2/9 to 8/11 where available, indicating a spread in the quality of evidence syntheses.

A significant focus of the evidence was on the reliability and validity of the tools. This was particularly evident for instruments like the SAQ, the CSES, and the LGBT-DOCSS. The presence of multiple systematic reviews suggests a good quality of evidence for some tools, while single studies indicate areas where more research may be needed.

Some evidence documents explored how scores on these tools related to important outcomes. For instance, Maslach Burnout Inventory (MBI) scores were correlated with quality of life, work-life balance, and career satisfaction among emergency medicine residents.(5) Similarly, the Person-centred climate questionnaire (PCQ-S) showed that staff in more person-centered units reported higher work satisfaction and less stress.

The adaptability of tools to different contexts was a recurring theme. Several evidence documents examined how tools originally designed for one setting could be adapted for use in others. The KFZA, initially developed for office environments, was found to be applicable in hospital settings with some modifications.(6) The PSS was evaluated for its effectiveness across different cultural contexts, particularly in relation to Latino populations in the United States.(7)

Some tools were developed and adapted for specific purposes or populations. The LGBT-DOCSS, for example, was specifically created for interdisciplinary use across various health professions. The SVEST was highlighted as relevant for

healthcare providers and organizations promoting a culture of safety. Cultural safety audit tools were developed for use with Aboriginal and Torres Strait Islander people in Australia, emphasizing the importance of context-specific instruments.

Some evidence documents focused on the ongoing development and improvement of tools. Some studies highlighted barriers to implementing these tools effectively, such as organizational responsibility and the risk of tools being deprioritized among other responsibilities.

Several tools were found to be useful not just for measurement but also for guiding improvements in practice. The PES-NWI is one such example, though researchers noted it needs further psychometric testing and updating.

In conclusion, while there is substantial evidence supporting the use of various tools for measuring aspects of physical, psychological, and cultural safety in healthcare, there remains a need for ongoing research. Future studies should focus on refining these tools, adapting them to different contexts, and understanding their relationship to important healthcare outcomes. The relevance of the evidence varied across tools, with some having more directly applicable findings than others, indicating areas where more targeted research may be beneficial.

Detailed summary of what we learned from the jurisdictional scan

We reviewed the experiences from all Canadian provinces and territories and seven international jurisdictions (Australia, Germany, Netherlands, New Zealand, Sweden, United Kingdom, United States) related to tools, metrics and measures that can be used to better understand the state of physical, psychological and cultural safety in healthcare settings, as well as whether and how efforts to learn and improve are having their desired effects in these domains. We identified a list of 35 tools that focused on physical, psychological, and cultural safety, of which nine were found to have been applied across either the Canadian or international jurisdictions:

- Health Standards Organization (HSO) Workforce Survey on Well-Being, Quality and Safety (Canada-wide)
- Impact of Event Scale – Revised (IES-R) (Quebec, Germany, Sweden)
- Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS) (United States)
- Perceived Stress Scale (PSS) (Germany, Netherlands)
- Psychological Safety Measurement (Edmondson) (Germany)
- Safety Attitudes Questionnaire (SAQ) (Prince Edward Island, Australia, United Kingdom, United States)
- Safety Climate Survey (SCS) (New Zealand)
- Second Victim Experience and Support Tool (SVEST) (United States)
- Short Questionnaire for Workplace Analysis (KFZA) (Germany)

We summarized key findings below.

Our jurisdictional scan of Canadian provinces and territories, in particular, identified three tools from our analysis that were applied across the country:

- Health Standards Organization (HSO) Workforce Survey on Well-Being, Quality and Safety (Canada-wide)
- Impact of Event Scale – Revised (IES-R) (Quebec)
- Safety Attitudes Questionnaire (SAQ) (Prince Edward Island).

The HSO Workforce Survey on Well-Being, Quality and Safety has been applied nationwide, with the primary aim of measuring perceptions of work-life quality and safety culture through an assessment of healthcare providers, patients, and their family members. In Quebec, the IES-R has been adopted in the French language as part of a post-disaster mental health impact surveillance toolkit to assess psychological safety in professionals and patients experiencing traumatic events. This tool has been shown to have good internal consistency, and satisfactory validity and test-retest reliability, thereby highlighting its potential as a viable measurement tool.

In addition, another seven tools, which were not originally found on our list, emerged during the scans of the remaining Canadian provinces (with the exception of Newfoundland and Labrador and the three territories where no tools were identified). In British Columbia, the Indigenous Cultural Safety Assessment Tool has frequently been used to determine the confidence physicians and healthcare staff have in their organization(s) to include Indigenous perspectives and combat anti-Indigenous racism. While initially developed in 2018, this tool has undergone user-acceptance testing from over 100+ volunteers and has been revised after several iterations of feedback from Indigenous and non-Indigenous scholars, educators, and managers. In Alberta and Nova Scotia, diversity awareness tools have been utilized among physicians and other healthcare team members to address cultural safety and assess awareness of one's attitudes and beliefs that promote workplace diversity and competency, in addition to assessing current practices for the integration of diversity, equity, and inclusion. In Saskatchewan, Manitoba, and Ontario, various initiatives exist within the health systems to promote and advance physical, psychological, and cultural safety, including providing guidance on key concepts and safe practices, training programs for healthcare workers and public service employees, and a curriculum for organizational leaders and front-line workers to improve relationships between services and Indigenous communities. Lastly, in New Brunswick, the Primary Health Survey has routinely been the most comprehensive provincial health services tool used as part of their efforts to better understand patient experiences, mental health, and health system transformation; over 13,000 residents complete this survey each year.

Our review of the experiences of international countries, in particular, identified eight tools from our analysis that were applied across these jurisdictions:

- Impact of Event Scale – Revised (IES-R) (Germany, Sweden)
- Safety Attitudes Questionnaire (SAQ) (Australia, United Kingdom, United States)
- Safety Climate Survey (SCS) (New Zealand)
- Second Victim Experience and Support Tool (SVEST) (United States)
- Perceived Stress Scale (PSS) (Germany, Netherlands)
- Psychological Safety Measurement (Edmondson) (Germany)
- Short Questionnaire for Workplace Analysis (KFZA) (Germany)
- Lesbian, Gay, Bisexual, and Transgender Development of Clinical Skills Scale (LGBT-DOCSS) (United States).

Two of the identified tools, the SAQ, and the SCS, focused on addressing cultural safety within healthcare organizations. The SAQ was applied in Australia, United Kingdom, and the United States as an assessment tool, targeting organizational leaders, physicians, and health professionals, to improve their culture of safety and care in hospital wards, departments, and healthcare facilities. This has been cited as a preferred tool of choice by the Clinical Excellence Commission in Australia for its validity, psychometric properties, and extensive use in both domestic and international settings. In New Zealand, the SCS has been adopted to survey health professionals on communication, workload, leadership, teamwork, and learning to better understand and openly discuss how to improve systems and cultural safety within an organization. On the other hand, the other identified tools focused more on addressing psychological and physical safety, such as the SVEST, PSS, and IES-R. In the United States, the SVEST was primarily used among health professionals and in pediatric settings to assess changes in second victim experiences and support perceptions over time. In Germany and the Netherlands, the PSS was modified for local contexts and found to have cross-cultural validity and usability when assessing for migration-related stress among organizational leaders, physicians, and other professionals in everyday life scenarios. The IES-R was used in Germany and Sweden in conjunction with additional screening tools (e.g., GAD-7, PHQ-9, FCV-19S, DASS-12) to investigate the mental health of organizational leaders, policymakers, physicians, and other health professionals to measure the psychological impact of the pandemic, and to implement actions that can reduce unwanted effects of such events on healthcare workers. In Germany, Edmondson and the KFZA were both further applied, particularly to investigate the affective commitment and mental health of Turkish immigrants employees and assistants working in primary care to better understand workplace stressors, the importance of social support and participation, and the benefits of having a psychologically safe workplace for a diverse workforce. Lastly, the LGBT-DOCSS, employed in the United States, is a self-assessment scale that focused on assessing LGBT clinical skills, attitudinal awareness, and basic knowledge, and has been shown to have strong internal consistency and two-week test-retest reliability.

Additionally, our review of the international countries yielded findings for another three tools that addressed cultural and psychological safety, which were not originally found in our analysis (i.e., 'included list'): 1) the Job Content Questionnaire in Germany, which focused on identifying 'cut-off' scores for job strain in nurses caring for breast cancer patients; 2) the Psychosocial Survey of Healthcare Workers in New Zealand, which aimed to better understand psychosocial health and well-being in the health sector; and 3) the Organisational Culture Inventory, which is used in Australia to determine and measure an organization's cultural safety by comparing and contrasting existing behavioural norms with the staff's vision for an 'ideal culture.'

Opportunities identified as a result of the analysis of evidence documents and from the jurisdictional scan

Our analysis of the best available research evidence and insights from experiences in Canadian and international jurisdictions suggests the following opportunities exist:

- developing, testing, and validating tools, metrics, and measures focused on supporting comprehensive and integrative assessments of all three areas of safety – physical, psychological, and cultural – across a wide range of healthcare settings and for a variety of health professionals
- increasing the availability comprehensive evaluations of and reporting related to the practical application of the identified tools, metrics, and measures included in this REP across various healthcare contexts and in a wider variety of settings (i.e., expanding beyond a narrow focus on hospital settings to include other key healthcare sectors such as primary care, rehabilitation, long-term care and home care), as well as beyond a narrow focus on patients and/or a single type of health professional (e.g., specialists working in a particular setting)
- establishing living evidence syntheses that are regularly updated with the latest evaluations of tools, metrics, and measures, and compare them to provide decision-makers with greater clarity about which ones are best suited to their contexts
- understanding whether and how the tools, metrics and measures included in our analysis – or any new tools, metrics, and measures that are developed – can support improvements in key outcomes related to health-system strengthening, such as equity-centred quadruple-aim metrics (improving health outcomes, patient experiences, and provider experiences while keeping costs manageable)
- conducting more research on the adaptability and cross-cultural validity of existing tools, particularly for use in diverse Canadian contexts, including validation studies in both English and French
- conducting comparative studies to evaluate the relative effectiveness of single-focus versus multi-focus safety assessment tools in healthcare settings, to determine if one design approach consistently yields more successful or useful instruments
- exploring the development of tools that can effectively measure changes in safety culture over time, allowing for better evaluation of improvement initiatives and interventions.

Furthermore, future contextualized work on this topic including the development of new safety tools metrics or measures could consider integrating existing workplace health and safety assessments and standards (e.g., Health Canada's Occupational Health and Safety Compliance Standards) as well as guidelines and assessment frameworks advanced by workers' compensation boards (e.g., WSIB).

References: See Appendix 8

Wu N, Alam S, Ciurea P, Moat KA. Rapid evidence profile #79: Identifying tools, metrics, and measures for physical, psychological, and/or cultural safety in healthcare settings. Hamilton: McMaster Health Forum, 13 September 2024.

To help health- and social-system leaders as they respond to pressing challenges, the McMaster Health Forum prepares rapid evidence profiles like this one. This rapid evidence profile was prepared with support received through a gift that was provided by the CMA Foundation. The McMaster Health Forum receives both financial and in-kind support from McMaster University. The views expressed in the rapid evidence profile are the views of the authors and should not be taken to represent the views of the CMA Foundation or McMaster University