MSI Patient Safety Culture Survey

2010 Survey Revisions: Creating the MSI-2010

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Background ► The MSI Patient Safety Culture Survey is designed to capture staff perceptions of patient safety culture in their healthcare organization. The first version of the MSI was developed as a Canadian adaptation of work by Singer, Gaba and colleagues (2003) at Stanford (MSI refers to the Modified Stanford Instrument). Since its initial development in 2002, and publication as an educational intervention outcome by Ginsburg, Norton, Lewis and Casebeer (2005) at the University of Calgary, the MSI has undergone small scale revisions in 2006 and 2007. Accreditation Canada has been using the MSI-2007 as part of its accreditation process since January 2008.

Rationale for Revisions to the MSI ► Analysis conducted of MSI-2006 and MSI-2007 data collected by members of the research team indicated that certain dimensions of the MSI had stronger statistical properties than others (see Ginsburg et al., 2009a). In addition, interpretation questions regarding a handful of survey items emerged fairly consistently between 2006 and 2009. Accordingly, over the last year researchers have revised the MSI to produce the MSI-2010. The MSI-2010 is designed to focus on a small number of key dimensions of patient safety culture.

Nature of Revisions ► The MSI-2010 continues to measure three dimensions of patient safety culture measured on the MSI-2007: ***Senior leadership support for safety***, ***Supervisory leadership support for safet***y, and ***Patient safety learning culture***. Leadership support for safety at the organizational and supervisory level are the most psychometrically sound dimensions of Patient Safety Culture (PSC) on the MSI-2007 and these two dimensions are also the most salient dimensions of PSC in the literature. Data on senior leadership support for patient safety gathered using earlier versions of the MSI can still be compared to data gathered using the MSI-2010 as the items in this dimensions remain unchanged. Five of seven ***Supervisory leadership support for safety*** items retained on the MSI-2010 can also be compared to data from the earlier versions of the MSI[1]. The MSI-2010 no longer measures the ***Threats to safety*** dimension due to data interpretation inconsistencies as well as the fact that this dimension, while important to the area of patient safety, is not a key dimension of PS culture. The dimension of ***Major event learning responses*** that was added in 2007 has been removed from the MSI-2010 as it is now part of a broader patient safety event learning checklist recently published (see Ginsburg et al., 2009b).

A key addition to the MSI-2010 reflects the area of ***Talking about errors***. As early as 1980, Zohar identified "communication" as vital to safety culture. The ability to feel comfortable and able to talk about patient safety issues and errors is a fundamental aspect of safety culture. This area relates to aspects of a just culture, and staff perceptions of the value of reporting

[1] To maintain consistency with wording used in the new bank of items on the MSI-2010, the word "mistake" was changed to "error" on one item in the supervisory leadership scale, however, this minor change should not limit comparability.

errors, but also to personal feelings of shame, as well as the degree of manager and co-worker support following errors. The MSI-2007 dimensions ***Shame and repercussions of reporting*** and ***Reporting culture*** touched on this area; however, the items were quite general, reliability of these scales was not strong enough and thee item did not adequately reflect the breadth of this important dimension. Accordingly, the MSI-2010 contains 17 new items designed to measure several aspects of this key area of patient safety culture, ***Talking about errors***.

The overall length of the MSI was reduced from 44 items (MSI-2007) to 38 items on the MSI-2010. The MSI-2010 contains 14 unchanged items and nine modified items from the MSI-2007, and 17 new items. Table 1 outlines all revisions between the MSI-2007 and the MSI-2010. Table 2 lists the 17 new items added to the MSI-2010.

Revision Process (Methods) ► The revision process was guided by a review of the literature related to: repercussions of error, just culture, barriers to communication and talking about error and other related issues. The focus was not on reporting per se but on concerns, fear, or discomfort related to reporting and talking about errors. A list of all existing survey items and dimensions that touch on this area was also compiled from the literature. Approximately 30 articles were identified and used in this process. Relevant excerpts were pulled from this literature and, in addition to the general themes of fear of repercussions and fear of blame, several more specific recurring themes were identified including:

- Safer/better not to speak up
- Why talk about errors? Nothing gets done
- Worry about job/promotion loss
- Concern over damage to professional reputation
- Fear of social exclusion
- Shame/personal failure/not wanting to admit mistakes
- Fear of litigation (physicians only)

For each if these themes, three to four items were selected or modified from existing survey items and literature, or were newly created. A final group of 26 items underwent cognitive testing in a series of six group interviews. These group interviews were carried out in three organizations (one teaching hospital, one community hospital, one rehab/complex continuing care hospital). The group interviews were intended to explore whether the questions make sense to front-line staff, whether they are understood as intended, how easy or difficult the questions are to answer, and how important the items are to the concept of communication and talking about errors. Interviewees were asked to first discuss what they felt stops staff from talking about errors/PS issues with their co-workers or the manager on their unit. Responses were consistent with the themes we identified from the literature noted above. The group interviews also yielded data on item clarity and ratings of item importance and explored the interpretation, wording and language of certain questions. Twenty-three RNs and RPNs, five allied health professionals and one healthcare aide participated in these group interviews and provided data on 26 survey items. Based on clarity and importance ratings (Hyrkas et al., 2003) and variability of each item, as well as item feedback from interviewees and assessment by the researchers, 17 new items tested in the focus groups were retained for the MSI-2010.

Other Issues Explored During the Revision Process ► The revision process highlighted several issues for consideration. The researchers used the literature and, where appropriate, the group interviews to address the following three issues:

- A language question: should the new items refer to communication and talking about "mistakes", "incidents", "errors", or "adverse events"? *Mistakes* were seen as potentially too numerous, *incidents* tend to be fairly narrowly defined as those things that are formally reported, *adverse events* is too technical a term. Interviewees agreed that for most items the focus should be on "errors".
- Clearer definition: In an effort to make questionnaire items as clear as possible, it was necessary to consider the severity of the errors that items are asking about. In the context of communicating and talking about errors and the themes outlined above that characterize this area, it was determined that, for most items, the most appropriate focus is on "serious errors". Most interviewees defined these as things that caused harm to a patient. Moreover, cognitive testing revealed that, unless explicitly asked to do so, front-line staff do not think about events with *harm potential*. A definition of serious error has been added to the top of the MSI-2010.
- First-person reflections: Should questionnaire items focus on the respondent (e.g. "this would happen to me" or "this is how I feel"), or should they be phrased in the third person (e.g. "this is what happens to others who make an error")? Patient safety culture surveys provide data on staff perceptions of the way safety is prioritized and handled in the organization and on the unit. Survey respondents sometimes have a difficult time answering questions about what happens to others. Accordingly, most items ask about the way things are done or are phrased in the first person with a few exceptions for items that would be awkward to ask about in the first person.

Demographic Section ► For the initial phase of implementation of the MSI-2010, it will be extremely valuable to add a question that asks whether English is a respondent's mother tongue (1st language learned). These data will provide important insight into our understanding of how the MSI-2010 items work in an ESL population (in some parts of Canada, the proportion of the health professional population for whom English is a second language may be as high as 50%). There are indications in the literature that negatively worded items may not work well in cross cultural populations. To examine the influence of mother tongue, the final questionnaire item asks whether or not a respondent's mother tongue is English. This question can be removed within a few months, after approximately 400 to 800 cases of data have been collected. More detailed questions about primary work area, occupation, and length of time in their profession have also been added to the MSI-2010 to help understand how these factors may influence perceptions of patient safety culture.

Next Steps ► Following the collection of approximately 400 - 800 cases, data from the MSI-2010 will be subjected to internal consistency reliability analysis, exploratory and confirmatory factor analysis.

Table 1
2007 MSI-2007 Dimensions & Items: Changes for MSI-2010

MSI-2007 Dimensions & Items (including 2007 item number)	MSI-2010
Senior leadership support for safety (valuing safety) 7 items (MSI-2007 alpha = 0.88) 1. Patient safety decisions are made at the proper level by the most qualified people 2. Good communication flow exists up the chain of command regarding patient safety issues 4. Senior management has a clear picture of the risk associated with patient care 7. Senior management provides a climate that promotes patient safety 12. Senior management considers patient safety when program changes are discussed 25. My organization effectively balances the need for patient safety and the need for productivity 26. I work in an environment where patient safety is a high priority	All seven items in this dimension have been retained with no wording changes.
F2 – Supervisory leadership for safety 7 items (MSI-2007 alpha = 0.81) 5. My unit takes the time to identify and assess risks to patients 6. My unit does a good job managing risks to ensure patient safety	These two items no longer appear on the MSI-2010 due to low factor loadings
16. I am rewarded for taking quick action to identify a serious mistake 29. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures 30. My supervisor/manager seriously considers staff suggestions for improving patient safety 31. (*) Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts 32. (*) My supervisor/manager overlooks patient safety problems that happen over and over	These 5 have been retained. To be consistent with wording in new items on MSI-2010, the word "mistake" in item 16 was changed to "error".
F3 – Threats to Safety 9 items (MSI-2007 alpha = 0.69) 11. I am less effective at work when I am fatigued 13. Personal problems can adversely affect my performance 17. Loss of experienced personnel has negatively affected my ability to provide high quality patient care 18. I have enough time to complete patient care tasks safely 20. In the last year, I have witnessed a co-worker do something that appeared to me to be unsafe for the patient in order to save time 21. I am provided with adequate resources (personnel, budget, and equipment) to provide safe patient care 22. I have made significant errors in my work that I attribute to my own fatigue 23. I believe that health care error constitutes a real and significant risk to the patients that we treat 24. I believe health care errors often go unreported	These nine items no longer appear on the MSI-2010. This change was made as a result of data interpretation inconsistencies as well as the fact that this dimension, while important to the area of patient safety, is not a key dimension of PS culture

…Table 1 continued

MSI-2007 Dimensions & Items (including 2007 item number)	MSI-2010
F4 – Fear of repercussions 4 items (MSI-2007 alpha = 0.69)	Key revisions carried out to create the MSI-2010 relate to the dimension. These four items were replaced with new items designed to measure the area of "Communication and talking about errors" on the MSI-2010 (see new MSI-2010 items below).
3. Reporting a patient safety problem will result in negative repercussions for the person reporting it 8. Asking for help is a sign of incompetence 9. If I make a mistake that has significant consequences and nobody notices, I do not tell anyone about it 14. I will suffer negative consequences if I report a patient safety problem	
F5 – Learning responses 5 items (MSI-2007 alpha = 0.77)	These five items no longer appear on the MSI-2010. PS Learning culture continues to be part of the MSI-2010 (see below); however, this behavioural measure of PS learning is now part of a broader Patient safety event learning checklist (see Ginsburg et al., 2009b).
41. Individuals involved in major events contribute to the understanding and analysis of the event and the generation of possible solutions 42. A formal process for disclosure of major events to patients/families is followed and this process includes support mechanisms for patients, family, and care/service providers 43. Discussion around major events focuses mainly on system-related issues, rather than focusing on the individual(s) most responsible for the event 44. The patient and family are invited to be *directly* involved in the entire process of understanding: what happened following a major event and generating solutions for reducing re-occurrence of similar events 45. Things that are learned from major events are communicated to staff on our unit using *more than* one method (e.g. communication book, in-services, unit rounds, emails) and / or at *several* times so all staff hear about it 46. Changes are made to reduce re-occurrence of major events	
F6 – Reporting culture	
10. I am sure that if I report an incident to our reporting system, it will not be used against me 19. I am not sure about the value of completing incident reports	These two items no longer appear on the MSI-2010.
15. If I report a patient safety incident, I know that management will act on it 27. Staff are given feedback about changes put into place based on incident reports (modified from AHRQ C1).	These two items (modified wording) were retained.
28. Individuals involved in patient safety incidents have a quick and easy way to report what happened	Item retained as key indicator of functionality of existing reporting systems
F7 – Learning culture	All six items in this dimension have been retained. However, "incident" has been changed to "serious error" for all but item 37 (for consistency with new MSI-2010 item wording).
33. On this unit, when an incident occurs, we think about it carefully 36. On this unit, when an incident occurs, we analyze it thoroughly 38. On this unit, after an incident has happened, we think long and hard about how to correct it 35. On this unit, after an incident has happened, we think about how it came about and how to prevent the same mistake in the future 34. On this unit, when people make mistakes, they ask others about how they could have prevented it 37. On this unit, it is difficult to discuss errors (modified from SAQ)	

Table 2
MSI-2010 – New Items designed to measure the area of *Talking about errors*

MSI-2010 New Items	Source
1. If I make a serious error I worry that I will face disciplinary action from the College	**
2. My co-workers will think I am incompetent if they know I've made a serious error	* Adapted: Wakefield et al. (1999)
3. I would feel ashamed if I made a serious error and my coworkers heard about it	* Adapted: VA Palo Alto (Singer et al., 2003; used in Cooper et al., 2008)
4. When an incident is reported, it seems like the person is being written up, not the problem	* AHRQ (Non-punitive response to error)
5. My co-workers would support me if they learned of a serious error I made	**
6. On my unit, staff who report a *co-worker's* error are labeled as 'not being a team player'	**
7. There is no point in talking about a patient safety problem because nothing usually gets done about it	**
8. My coworkers will lose respect for me if they know I've made a serious error	* Adapted: VA Palo Alto (Singer et al., 2003; used in Cooper et al., 2008)
9. If I report a patient safety incident, someone usually follows up to get more information from me	**
10. On this unit it is difficult to speak up if you feel there is a problem related to patient safety	* Adapted: SAQ (Sexton, 2006)
11. Making a serious error may cause a nurse to lose his/her job.	**
12. If I make a serious error my manager will think I am incompetent	**
13. On this unit it is difficult to question the decisions or actions of those with more authority	* Adapted: AHRQ (Communication Openness dimension)
14. Others make you feel like a bit of a failure when you make a error	**
15. If I make a serious error I worry that I will face disciplinary action from management	**
16. Making a serious error would limit my career opportunities around here	**
17. If I made a serious error my manager would be supportive	**

Note: * Denotes items from other instruments that have been used verbatim or with minor modifications
** Items were developed based on broader themes identified in the literature (see p.2)

References ►

Agency for Healthcare Research and Quality (2010). Hospital Survey on Patient Safety Culture. Retrieved August 24, 2010 from http://www.ahrq.gov/qual/patientsafetyculture/hospsurvindex.htm

Attree M (2006). Factors influencing nurses' decisions to raise concerns about care quality. *Journal of Nursing Management*, 15 (4), 392-402.

Blegen MA, Gearhart S, O'Brien R, Sehgal NL, Alldredge BK (2009). AHRQ's hospital survey on patient safety culture: psychometric analyses. *Journal of Patient Safety*, 5(3):139-44.

Cooper JB, Blum RH, Carroll JS, Dershwitz M, Feinstein DM, Gaba DM, Morey JC, Singla AK (2008). Differences in Safety Climate Among Hospital Anesthesia Departments and the Effect of a Realistic Simulation-Based Training Program. *Anesthesia Analgesia,*106:574-84.

Edmondson AC. (1999) Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44(2), 350 - 83.

Elder NC, Brungs SM, Nagy M, Kudel I, Render ML (2008). Nurses' Perceptions of Error Communication and Reporting in the Intensive Care Unit. *Journal of Patient Safety*, 4(3):162-168.

Evans SM, Berry JG, Smith BJ, Esterman A, Selim P, O'Shaughnessy J, DeWit M (2006). Attitudes and barriers to incident reporting: a collaborative hospital study. Quality & Safety in Health Care, 15:39–43.

Firth-Cozens J (2004). Organizational trust: the keystone to patient safety. *Quality & Safety in Health Care,* 13:56-61

Frankel AS, Leonard MW, Denham CR (2006). Fair and Just Culture, Team Behavior, and Leadership Engagement: The Tools to Achieve High Reliability. *Health Services Research*, 41(4 Pt 2): 1690–1709.

Ginsburg, L, D Gilin, D Tregunno, PG Norton, M Fleming, W Flemons (2009a). Advancing Measurement of Patient Safety Culture. *Health Services Research,* 44(1): 205-224.

Ginsburg L, Y Chuang, PG Norton, W Berta, D Tregunno, P Ng, J Richardson (2009b). Development of a Measure of Patient Safety Event Learning Responses. *Health Services Research*, 44(6): 2123-2147.

Ginsburg, L, PG Norton, S Lewis, A Casebeer (2005) An educational intervention to enhance nurse leader perceptions of patient safety culture. *Health Services Research,* 40(4): 997-1020.

Handler et al. (2007). Identifying Modifiable Barriers to Medication Error Reporting in the Nursing Home Setting. *Journal of the American Medical Directors Association*, 8 (9): 568-574.

Hyrkas, K, K Appelqvist-Schmidlechner, L Oksa (2003). Validating an instrument for clinical supervision using an expert panel. *International Journal of Nursing Studies*, 40: 619–625

Jeffe D. et al (2004). Using Focus Groups to Understand Physicians' and Nurses' Perspectives on Error Reporting in Hospitals. *Joint Commission Journal on Quality and Patient Safety*, 30(9): 471-479.

Jeffs L, Law M, Baker GR (2007). Creating Reporting and Learning Cultures in Health-Care Organizations. *The Canadian Nurse,* 103, 3.

Kaldjian et al (2006). An empirically derived taxonomy of factors affecting physicians' willingness to disclose medical errors. *Journal of General Internal Medicine*, 21 (9), 942-948.

Kingston MJ et al (2004). Attitudes of doctors and nurses towards incident reporting: a qualitative analysis. *Medical Journal of Australia*, 181 (1): 36-39.

Kish-Gephart JJ, Detert JR, Klebe Treviño L, Edmondson A (2009). Silenced by fear: The nature, sources, and consequences of fear at work. *Research in Organizational Behavior*, 29, 163-193.

Morath J, Leary M (2004). Creating Safe Spaces in Organizations to Talk About Safety. *Nursing Economics;* 22, 6: 344-354.

Orbe MP, King G (2000). Negotiating the Tension between Policy and Reality: Exploring Nurses' Communication about Organizational Wrongdoing. *Health Communication*, 12(1),41-61

Reason J (1997). *Managing the Risks of Organizational Accidents*. Aldershot, UK: Ashgate.

Sexton JB, Helmreich RL, Neilands TB, Rowan K, Vella K, Boyden J, Roberts PR, Thomas EJ (2006). The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. *BMC Health Services Research*. Apr 3;6:44.

Singer S, Meterko M, Baker L, Gaba D, Falwell A, and Rosen A (2007). Workforce Perceptions of Hospital Safety Culture: Development and Validation of the Patient Safety Climate in Healthcare Organizations Survey. *Health Services Research*, 42(5):1999-2021.

Singer SJ, Gaba DM, Geppert JJ, et al (2003). The culture of safety: results of an organization-wide survey in 15 California hospitals. *Quality and Safety in Health Care*. 12:112-118.

Smits M, Christiaans-Dingelhoff I, Wagner C, Wal G, Groenewegen PP (2008). The psychometric properties of the 'Hospital Survey on Patient Safety Culture' in Dutch hospitals. *BMC Health Services Research*. Nov 7;8:230.

Uribe, C. et al. (2002). Perceived Barriers to Medical-Error Reporting: An Exploratory Investigation. *Journal of Healthcare Management*, 47 (4), 263,-280.

Wakefield, B.J., Tanya Uden-Holman, Douglas S. Wakefield (2005). Development and Validation of the Medication Administration Error Reporting Survey. *Advances in Patient Safety* vol 4. pp.475-489

Wakefield, D.S., Wakefield, B.J., Uden-Holman, T. and Blegen, M.A. (1996). Perceived barriers in reporting medication administration errors. *Best Practices and Benchmarking in Healthcare*, 1(4):191-197.

Wakefield, D.S., Wakefield, B.J., Uden-Holman, T., Borders, T., Blegen, M. and Vaughn, T. (1999). Understanding why medication administration errors may not be reported. *American Journal of Medical Quality*, 4(2):81-88

Walker, et al. (1998). Nurses' views on reporting medication incidents. *International Journal of Nursing Practice*, 4 (2): 97-102.

Waring JJ (2005). Beyond blame: cultural barriers to medical incident reporting. *Social Science and Medicine*, 60, 1927-1935.

Waterson P, Griffiths P, Stride C, et al. Psychometric properties of the Hospital Survey on Patient Safety Culture: findings from the UK. *Quality & Safety in Health Care*. 2010 Mar 8. [Epub ahead of print].

Wiener et al. (2008). The meaning of justice in safety incident reporting. *Social Science and Medicine*, 66, 403-413.

Wilson, et al. (2008) .Reporting of Clinical Adverse Events Scale: a measure of doctor and nurse attitudes to adverse event reporting. *Quality & Safety in Health Care*, 17:364-367.

Zohar, D (1980). Safety climate in industrial organizations. Theoretical and applied implications. *Journal of Applied Psychology, 65(1):* 96-102.