Foundation of the
American College *of*
Healthcare Executives
for leaders who care®

The CEO's Role in Driving Patient Safety Outcomes

Division of Member Services, Research
American College of Healthcare Executives

CEO Circle White Paper
Summer 2018

INTRODUCTION

Ensuring the safety of patient care is an ongoing priority for U.S. hospitals. Healthcare leaders continue to look for better ways to realize the goal of zero harm to patients in their care. Over time, there has been considerable progress in improving patient safety outcomes. For example, in their most recent report, the *2016 National Healthcare Quality and Disparities Report*, the Agency for Healthcare Research and Quality reported that almost two-thirds of their patient safety measures were improving overall. But, there is still work to do. In 2016, the American College of Healthcare Executives (ACHE) partnered with The Institute for Healthcare Improvement (IHI) and the National Patient Safety Foundation (NPSF) Lucian Leape Institute to collaborate with some of the most progressive healthcare organizations and globally renowned experts in leadership, safety and culture. Through this work, they developed *Leading a Culture of Safety: A Blueprint for Success*, an evidence-based, practical resource published in 2017 to assist healthcare leaders in creating a culture of safety.

CEOs play a critical role in driving sustainable patient safety improvements in their organizations. Seeking to better understand patient safety improvement efforts in hospitals across the country, ACHE partnered with researchers at The Ohio State University to conduct the *Hospital CEO Survey on Patient Safety* in December 2017. Using the *Blueprint* as the framework, the survey was designed to assess the prevalence of some key patient safety efforts across the country and gain insight into the CEO's role in advancing these efforts. Surveys were distributed to 1,045 hospital CEOs who were ACHE members; 364 responded for an overall response rate of 35 percent. Leaders of organizations of varying sizes, locations and ownership models were represented in the results.

The real measure of patient safety is, of course, in the outcomes. This survey focused on the prevalence of practices recommended by experts as a means to improving these outcomes.

The good news is that the results of the survey indicate that most hospitals represented in the survey have adopted — or are in the process of adopting — the majority of key practices included in the survey. These results also identify patient safety practices named in the *Blueprint* that have been less consistently applied, suggesting potential areas of challenge or opportunity for greater focus. Finally, the survey results provide specific insight into ways in which CEOs can have the greatest impact on their organizations' successes regarding patient safety.

This white paper presents the survey results, offers suggestions for organizations looking to advance their patient safety journey, offers some insights regarding patient safety practices that may be more challenging for some organizations and highlights the critical role that the CEO personally plays in leading a culture of safety.

This white paper was written by Julie Robbins, PhD, The Ohio State University; Griffin Olsen, MD, The Ohio State University, and Leslie A. Athey, director, Research, American College of Healthcare Executives.

FINDINGS

To what extent have hospitals adopted practices that support a strong patient safety culture?

The 2017 *Hospital CEO Survey on Patient Safety* found widespread implementation of patient safety practices named in the survey, which were recommended in the *Blueprint*. The survey asked respondents to indicate whether their organizations had implemented—or had plans to implement—38 different patient safety practices divided into six categories. Table 1 gives an overall view of rates of adoption of practices in the six categories. Taken together, 67 percent of hospitals in the study had adopted three-quarters (75 percent) or more of the 38 recommended practices at the time of the survey. Only 4 percent had adopted less than 19 (50 percent) of the recommended practices. Adoption was highest in the categories of clinician engagement and patient safety goals, with 78 percent and 77 percent of CEOs in the survey, respectively, reporting that their organizations had adopted three-quarters or more of the recommended practices. This is followed in descending order by response to safety events, patient safety training, board engagement and senior leader engagement; with 72 percent, 67 percent, 63 percent and 62 percent of CEOs, respectively, reporting that 75 percent or more of the recommended practices were in place in their hospitals. (Please note that these sums may appear to differ slightly from the sums achieved by adding the table entries together; this is due to rounding.)

Table 1: Patient Safety Practice Adoption by Category

		Percent of hospitals (N=364) with the following proportions of recommended practices in place:			
		Less than half (<50%)	**Half to three-quarters (50 - 74%)**	**More than three-quarters but less than all (75 - 99%)**	**All (100%)**
Patient safety goals	9	6%	17%	52%	24%
Senior leader engagement	6	10%	29%	24%	37%
Response to safety events	3	19%	9%	0%	72%
Patient safety training	6	8%	26%	26%	41%
Board engagement	6	10%	27%	30%	32%
Clinician engagement	8	5%	18%	51%	26%
Total	38	4%	29%	60%	7%

The section below includes a more detailed review of the specific practices in each category and their rates of adoption, or planned adoption, among survey respondents.

Category 1: Patient Safety Goals

This category includes practices that leaders use both to a) communicate the organization's commitment to, and goals for, patient safety improvement to key stakeholders and b) motivate their support for advancing these goals. These practices are listed in the figure below along with adoption rates among survey respondents. Overall, these results indicate that:

- Nearly all CEOs (94 percent) reported that they communicated the importance of learning from mistakes to employees, an important aspect of maintaining a safety culture.

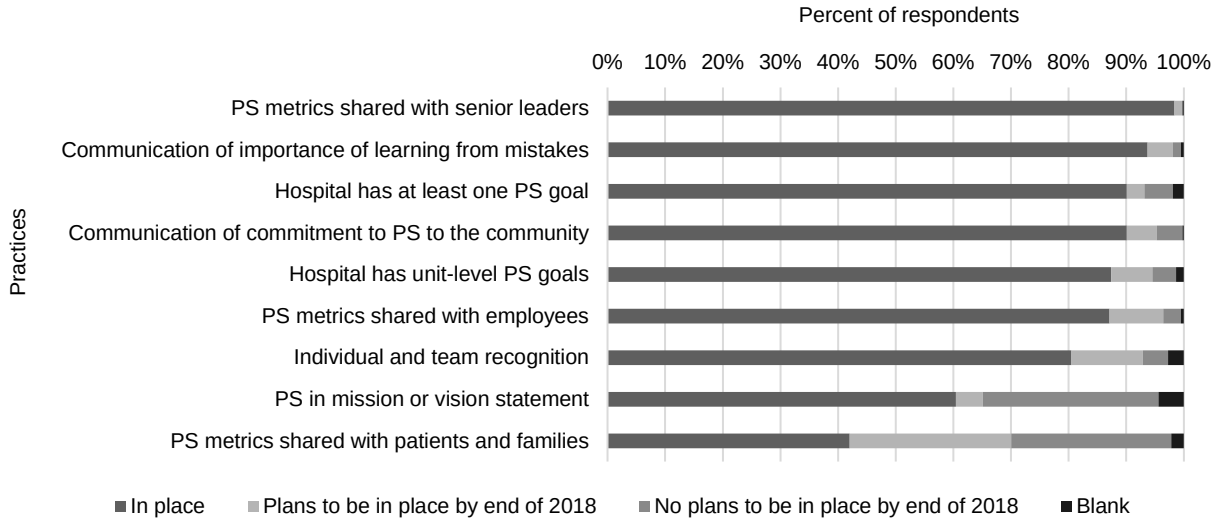
- Nearly all organizations represented in the study had established patient safety goals at the organizational (90 percent) and unit (87 percent) levels.

- According to CEOs in the study, patient safety metrics were routinely shared with senior leaders (98 percent) and employees (87 percent), but leaders of fewer than half of the organizations in the study (42 percent) said they were shared with patients or families. An additional 28 percent said they plan to share these metrics with patients and families by the end of 2018, bringing the projected proportion of organizations with this practice to 70 percent by the end of the year.

- While nearly all CEOs in the study (90 percent) said they communicate the importance of patient safety to the community, only 60 percent report that they have incorporated patient safety into their organization's mission and vision statement, an important vehicle for codifying organizational priorities. An additional 5 percent of organizations plan to add patient safety to their mission and vision statements by the end of 2018.

- Eighty percent of CEOs in the study said their organizations recognize individuals and teams for meeting safety goals, although an additional 12 percent expect this to be something they do by the end of 2018.

Figure 1. Adoption of Patient Safety (PS) Goals Practices



Category 2: Senior Leader Engagement

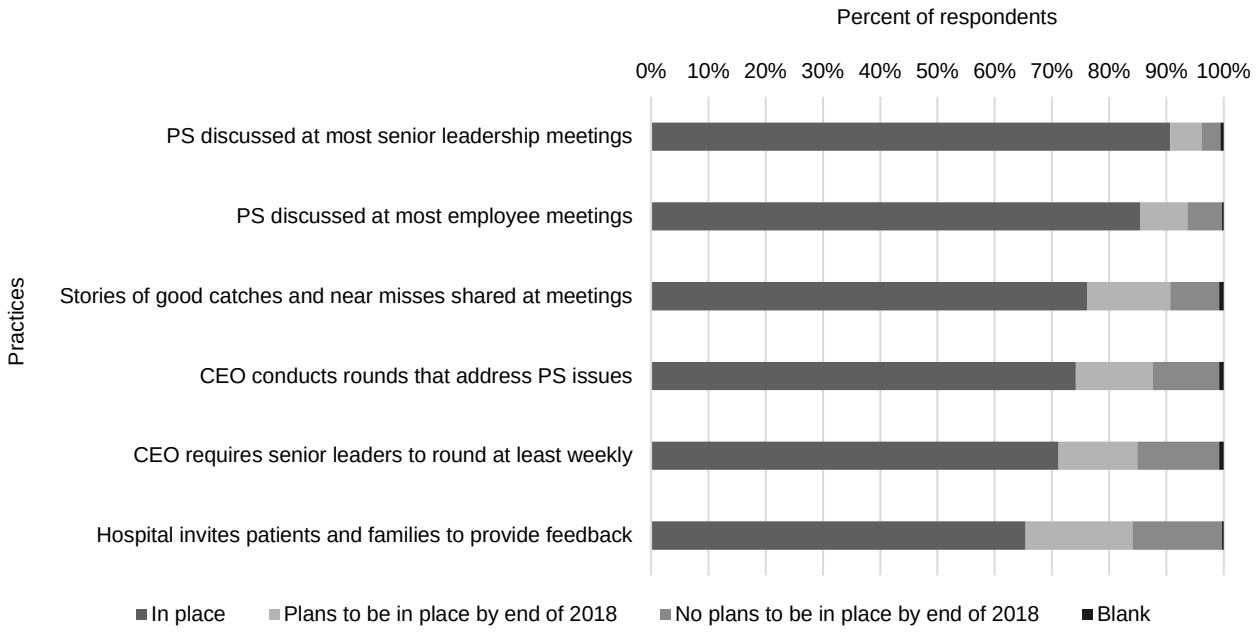
This category includes actions that CEOs and senior leaders can personally take to drive patient safety results. These practices are listed in the figure at the end of this section, along with current and planned adoption rates among survey respondents. Overall, these results indicate that:

- Patient safety is widely discussed at leadership and employee meetings, with 91 percent of CEOs in the study reporting that these discussions occur in leadership meetings, and 85 percent reporting that they occur in employee meetings. Stories of "good catches" and "near misses" were reported as being shared regularly at employee meetings in 76 percent of the organizations included in the study, with another 15 percent saying they plan to have this practice in place by the end of 2018.

- About three-quarters, 74 percent, of CEOs said they personally conduct patient safety rounds and an additional 13 percent plan to institute this practice by the end of 2018. Similarly, 71 percent of CEOs in the survey said they required their senior leaders to conduct these patient safety rounds at least weekly, and an additional 14 percent plan to require their senior leaders to do so by the end of 2018.

- Currently, about 65 percent of organizations studied actively invite patients and families to provide feedback on patient safety initiatives; an additional 19 percent say they plan to do so by the end of 2018.

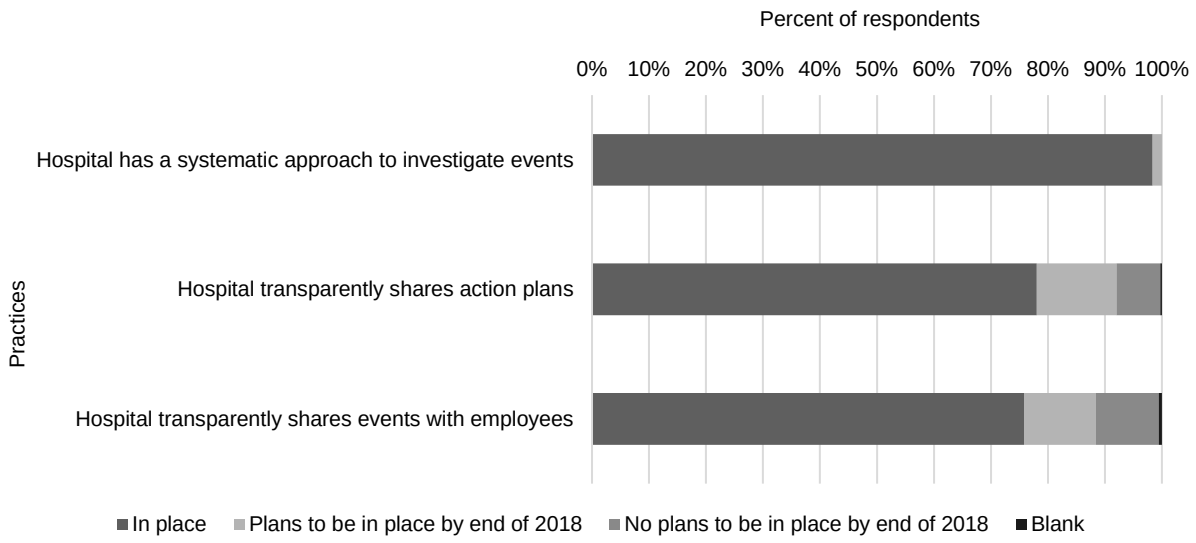
Figure 2. Adoption of Senior Leader Engagement Practices



Category 3: Response to Patient Safety Events

Questions included in this category assessed three ways in which organizations investigate and respond to patient safety events. As indicated in the figure below, nearly all respondents (98 percent) indicated that they had a systematic approach to investigating safety events; however, somewhat fewer said they shared action plans for responding to safety events (78 percent) or the reported events themselves (76 percent) with employees across the organization. According to plans reported by CEOs in the survey, these proportions will be 92 percent and 89 percent, respectively, by the end of 2018.

Figure 3. Adoption of Practices Regarding Response to Safety Events



Category 4: Patient Safety Training

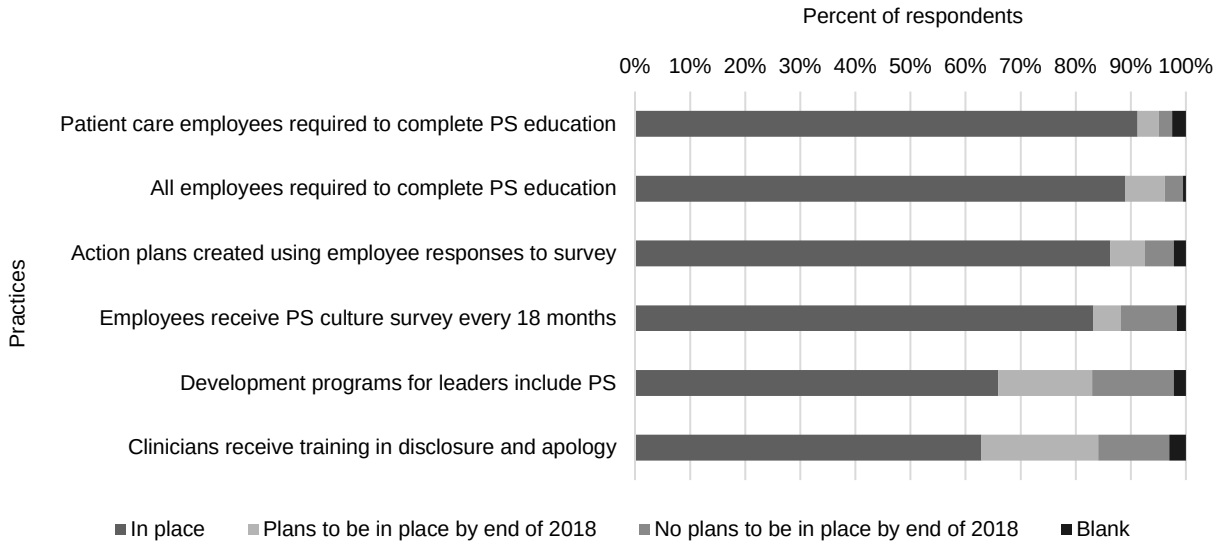
This category includes ways in which organizations advance safety culture through their commitment to a) education and training, and b) systematic monitoring and improvement. These practices are summarized in the figure below, which also shows current and planned adoption rates among respondents. These results suggest:

- Patient safety training has been widely adopted for employees, with 91 percent of CEOs reporting that hospital employees who directly impact patient safety (e.g., are involved in direct patient care) were required to complete patient safety education, and 89 percent reporting that this education was required for ***all*** employees. However, patient safety is less widespread as a specific focus for developing leaders, with 66 percent of CEOs surveyed reporting that development programs for leaders included developing competencies in patient safety. According to plans reported by CEOs in the study, 83 percent of their organizations will include patient safety in leadership development programs by the end of 2018.

- Organizations are working to systematically evolve a patient safety culture; 83 percent of CEOs in the study reported that employees are surveyed at least every 18 months about their perceptions of the organization's safety culture. Whether or not employee surveys are conducted with that frequency, 86 percent of respondents indicated that they use employee responses to safety culture surveys to focus improvements.

- The least widely adopted recommendation from the *Blueprint* regarding patient safety training as reported by survey respondents was providing clinicians and other hospital employees with training for communicating with patients that includes disclosure and apology. CEOs overseeing 63 percent of the organizations represented in the study reported that this practice is currently in place in their hospitals; an additional 21 percent said this practice would be in place by the end of 2018.

Figure 4. Adoption of Patient Safety Training Practices



Category 5: Board Engagement

Questions in this category are concerned with the degree to which boards are educated about, and engaged in, driving patient safety improvements. Practices in this category are summarized in the figure below, which indicates current and planned adoption rates among responding organizations. These results suggest:

- Widespread engagement regarding patient safety at the board level, with 90 percent of respondents reporting that patient safety leaders attend meetings of the board responsible for patient safety in the hospital, and 89 percent saying that members of the responsible board are educated about patient safety and a safety culture.

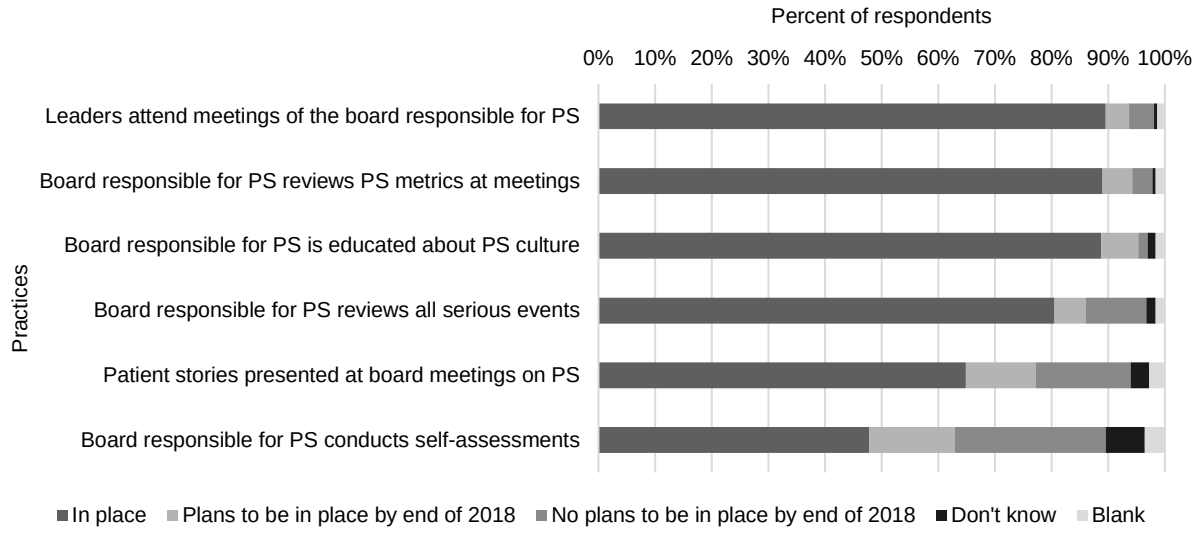
- Boards were commonly involved with reviewing patient safety data, with 89 percent of CEOs in the study reporting that the board overseeing patient safety for the hospital

reviews patient metrics and dashboards at each meeting, and 80 percent saying the responsible board reviews all serious safety events at the hospital.

- The least widely adopted practice regarding board-level engagement in patient safety was for members of the board responsible for patient safety for the hospital to conduct regular self-assessments related to their knowledge and understanding of safety culture. This practice was reported as being currently in place in less than half, 48 percent, of hospitals represented in the study. Further, about one-quarter, 27 percent, of CEOs responding to the survey said there were no plans to institute this practice by the end of 2018. Whether this indicates that knowledge in this area is not frequently included on the board self-assessments, or if the practice of board self-assessments does not occur in many organizations, is not clear from the data.

  Because the procedures pertaining to the boards responsible for patient safety for their hospitals might not be known to all survey respondents, questions about board engagement in patient safety contained options for CEOs to answer "don't know" regarding any particular practice. CEOs were the least informed about board practices regarding self-assessments covering knowledge and understanding of safety culture, with 7 percent responding "don't know" to this item.

Figure 5. Adoption of Board Engagement Practices



Category 6: Clinician Engagement

Questions in this category assessed different ways in which organizations educate and engage different groups of clinicians in patient safety improvement efforts. The results are summarized in the figure below, which lists different clinician engagement practices recommended in the *Blueprint* along with rates of current and planned adoption in hospitals. Key findings include:

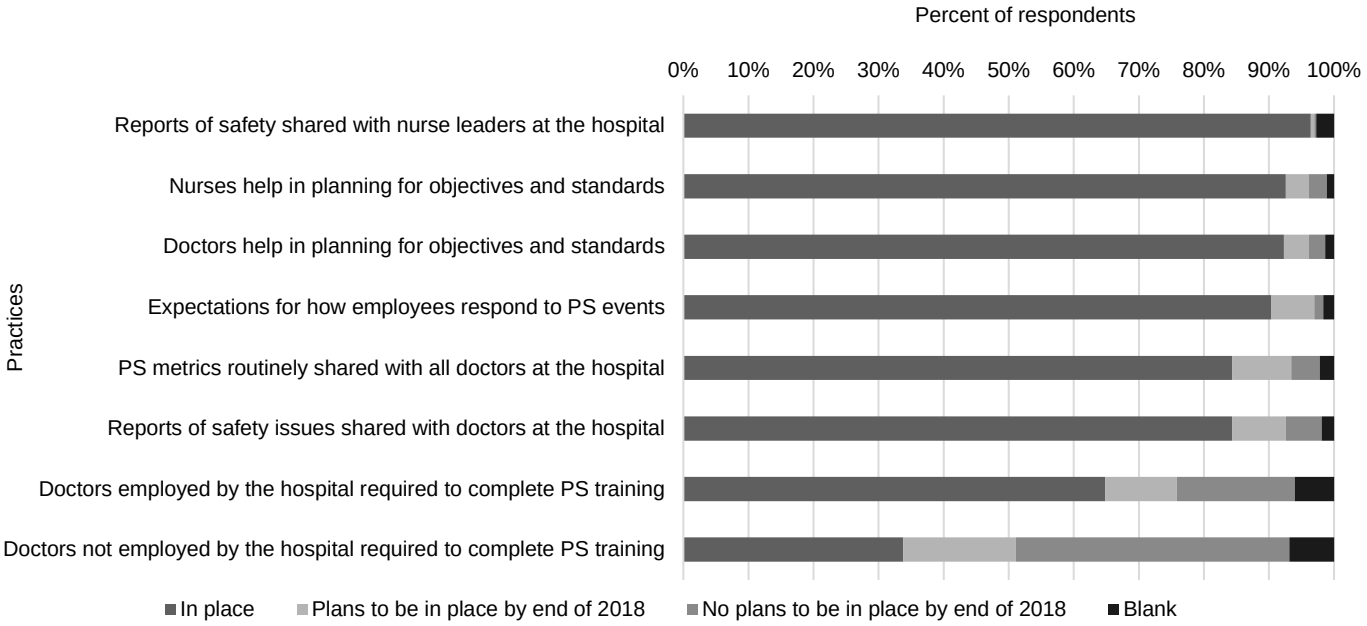
- Nearly all CEOs in the study (96 percent) reported that their hospitals shared reports of patient safety issues with nurse leaders, but somewhat fewer (84 percent) said they share them with all physicians practicing in the hospital, including both those employed by the hospital and those who are not. An additional 8 percent of organizations plan to have the latter practice in place by the end of 2018. Similarly, 84 percent of responding CEOs said that safety metrics were routinely shared with physicians practicing in the hospital, whether or not those physicians were hospital employees, and an additional 9 percent expect to have this practice in place by the end of 2018.

- Almost all CEOs in the study reported that their hospital actively engage both nurses (93 percent) and physicians (92 percent) in setting patient safety objectives and standards.

- Almost all CEOs in the study (90 percent) said there were clear expectations for how all employees, including physicians, are to respond to safety issues or incidents in the hospital. An additional 7 percent plan to have this in place by the end of 2018.

- By contrast, 65 percent of hospitals in the study required physicians employed by the hospital to complete patient safety training, and the proportion is even lower for physicians who are not employed by the hospital – 34 percent. Substantial proportions of the CEOs responding said they plan to add these practices by the close of 2018. An additional 11 percent of CEOs who answered the survey said they plan to require employed physicians to complete safety training by the end of the year, and an additional 17 percent said that physicians not employed by the hospital would be required to complete patient safety training by the close of 2018

Figure 6. Adoption of Clinician Engagement Practices



What are some of the challenges in evolving a safety culture?

Although our survey found widespread implementation of most of the patient safety practices in our questionnaire, there were several with notably lower current adoption rates. These findings suggest either that these practices are more challenging to implement, or perhaps leaders have not prioritized them in their particular journey towards patient safety culture and improvement. Below is a list of practices recommended in the *Blueprint* with lower adoption rates among hospitals represented in the survey, along with some considerations about each.

Explicitly including patient safety in the organization's mission or vision statement. Patient safety is Job No. 1 for hospitals. By the end of 2018, patient safety will be included in the mission or vision statements of 65 percent of the hospitals participating in this study, according to survey respondents. Many respondents indicated that although patient safety is not part of their formal mission or vision statement, it is articulated elsewhere, such as in a goals documents, or listed as an organizational priority. Given the importance of patient safety, it is worth discussion among hospital leaders and boards whether the organization should consider formalizing it as part of the vision and mission as a way to clearly communicate its importance and engage staff at all levels in a shared purpose.

Transparency with patients and families. At the time of the survey, 42 percent of CEOs responding to the survey indicated that the hospital they lead makes patient safety metrics transparent to patients and families, such as having them posted in public spaces in the hospital or on the hospital's website. An additional 28 percent of respondents plan to have this practice in their hospitals by the end of 2018. Similarly, 65 percent actively invite patients and their families to provide feedback on patient safety initiatives; and this proportion is expected to rise to 84 percent by the end of the year. The *Blueprint* encourages healthcare leaders to aim for total transparency and engage patients and families in shared decision-making. One barrier to fully disclosing patient safety data is fear of potential liability and/or financial risk. Emerging literature indicates that this fear may be unwarranted, with a recent study finding no increase in liability claims or costs after a health system implemented a full disclosure policy (Kachalia, Kaufman, Boothman, Anderson, Welch, Saint, & Rogers, 2010). Within our survey, comments suggest that the move towards greater transparency has been beneficial. For instance, one respondent noted, "Over the past year, we have been more transparent in discussing adverse events with patients and family. That's been a positive outcome for both sides!" Hospitals need to give careful consideration to their circumstances and communicate this information responsibly. But there is evidence that greater transparency has considerable benefits and perhaps less of a down side than might be supposed.

Investment in training and education. Although the majority of respondents have adopted practices to support patient safety education and training among leaders, clinicians and staff, our survey found that there may be some opportunity for greater focus in this area. For example, among our respondents:

- About 76 percent indicated that by the end of 2018, they planned to require employed physicians to participate in education or training to develop patient safety competencies; with just over half, 51 percent, indicating that they would require this for practicing physicians not employed by the organization by that time. Research has shown that patient safety training for clinical staff can enhance safety culture within an organization (Ginsburg, Norton, Casebeer, & Lewis, 2005). The *Blueprint* highlights the importance of

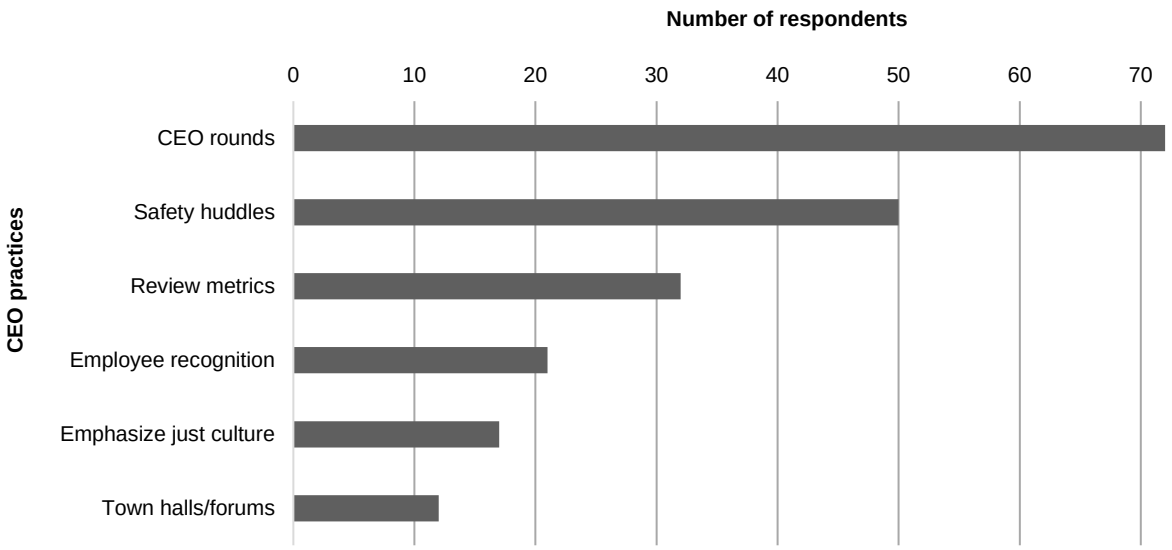
investing in the identification and training of physician and nurse patient safety leaders who can encourage buy-in among frontline staff and provide candid feedback to senior leaders.

- Currently, 66 percent require training to develop hospital leaders' competencies in patient safety in the near future, with an additional 17 percent expecting to add this practice by the end of 2018. Top leaders play a critical role in communicating a vision for patient safety and aligning behavior and resources across the organization to support accomplishment of that vision. Evidence suggests educating leaders about the importance of, and their role in, advancing a safety culture is a critical factor for success in achieving patient safety outcomes (McAlearney, Hefner, Robbins, & Garman, 2016).

What is the CEO's role in personally advancing a patient safety culture?

Recognizing that the CEO plays a critical role in establishing patient safety as an organizational priority and evolving a safety culture within their organization, we asked respondents to indicate "*What is the **one** most effective thing that you, personally, do to improve patient safety in the hospital you lead?"* Respondents indicated specific practices that incorporate direct CEO involvement in creating a culture of safety. These are summarized in Figure 7 below.

Figure 7. The Most Effective Things CEOs do to Improve Patient Safety



CEO and Senior Staff Rounding. By far, the largest number of CEO respondents indicated that rounding was the most effective thing that they did to improve patient safety. Notably, this was among the less frequently adopted practices among CEOs who responded to the survey. Almost three-quarters, 74 percent, said that they currently personally conduct rounds, with a slightly lower proportion (71 percent) who currently require their senior leaders to conduct rounds weekly. Although the approach likely varies from one organization to the next, the concept of rounding includes hospital executives visiting clinical areas to discuss patient safety issues with caregivers (Frankel, Grillo, Pittman, Thomas, Horowitz, Page, & Sexton, 2008).

Conducting rounds is a way that leaders can visibly demonstrate their commitment to patient safety as a priority and enhance their organization's safety culture (Rubin & Stone, 2010; Schwendimann, Milne, Frush, Ausserhofer, Frankel, & Sexton, 2013; Morello, Lowthian, Barker, McGinnes, Dunt, & Brand, 2013). Rounding gives executives an opportunity to seek input from employees and foster non-punitive environments where employees feel comfortable raising concerns about patient safety (Robbins & McAlearney, 2016). Rounding is also an important way that leaders can directly "assess the landscape" for patient safety in their own organizations both through observation and engaging with clinicians, staff, patients and families (*Blueprint*). However, for rounding to be effective, leaders must be intentional and genuine in their practice. For instance, if frontline staff make suggestions that are consistently not acknowledged or addressed, rounds can have a negative effect and disintegrate employees' trust in leadership (Singer & Tucker, 2014).

Patient Safety Huddles. The second largest number of CEO respondents identified "huddles" as the most important thing that they personally do to improve patient safety. "Huddles," or regular meetings of cross-functional groups that come together to identify and address quality and safety concerns, have been linked to improvements in patient safety (Leonard, Graham, & Bonacum, 2004; Goldenhar, Brady, Sutcliffe, & Muething, 2013). Participation in huddles can signal leaders' commitment to patient safety and supports a strong safety culture by creating a forum in which patient safety can be discussed openly with a focus on organizational learning and improvement (Provost, Lanham, Leykum, McDaniel, & Pugh, 2015).

Sharing Metrics with Staff. The third most frequently mentioned practice that CEOs can do personally to develop a patient safety culture, according to survey respondents, is **s**haring patient safety metrics with staff. Sharing quality data with staff is an important way to engage staff and enlist their support in advancing patient safety goals, particularly if implemented in conjunction with other practices designed to develop skills and motivate and reward improvements (McAlearney, Hefner, Robbins, & Garman, 2016).

What are the greatest patient safety successes reported by survey respondents?

When asked about the *one* greatest success in improving patient safety and the key to making it happen, responses fell into two categories: 1) achievement of specific safety outcomes (e.g., reducing patient falls or favorable comparisons to external benchmarks), or 2) successful implementation of organizational patient safety practices such as rounding and huddles or, more broadly, the successful implementation of a "just culture." The most frequently cited outcomes achieved are summarized in Figure 8, and the most frequently cited implementations are summarized in Figure 9, both below.

Figure 8. Successes in Achieving Patient Safety Outcomes

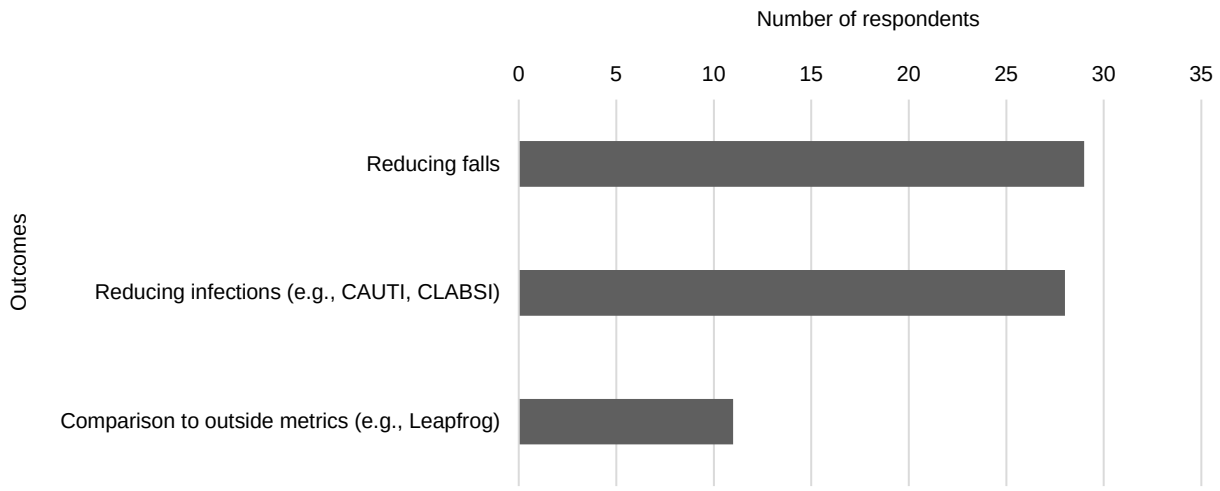
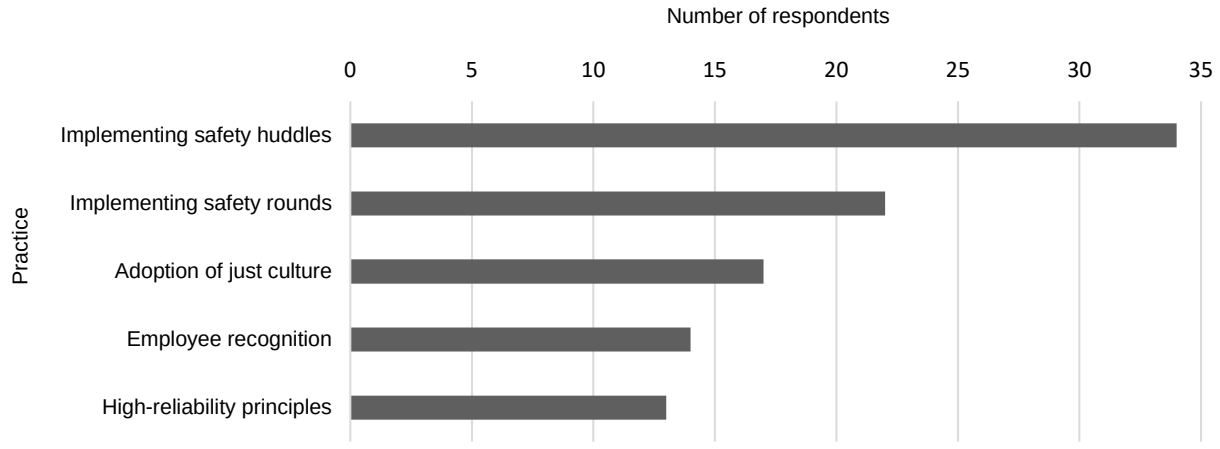


Figure 9. Organizational Successes in Improving Patient Safety



RECOMMENDATIONS

Achieving the goal of zero patient harm is a journey. Creating a culture of safety lays an organizational foundation upon which leaders, clinicians and staff can work together towards achieving this goal. The *Blueprint* identifies evidence-based leadership practices, strategies and tools that support successful implementation of a strong culture of safety. The results of the *2017 Hospital CEO Survey on Patient Safety* are encouraging, suggesting that these practices are being widely adopted in hospitals of all sizes and types across the country, but also indicates areas which may be more challenging for some organizations. More importantly, the results of this survey offer first-hand insight from CEOs regarding the specific ways in which they can personally advance and impact patient safety culture and outcomes in their organizations — lessons that are valuable for leaders at every stage of the patient safety journey.

In addition to considering the insights provided in this White Paper, healthcare leaders looking to gauge their progress on their path to zero patient harm, and have the means to develop productive next steps, are encouraged to do the following:

- Download *Leading a Culture of Safety: A Blueprint for Success*, read it, and discuss it with members of your senior leadership teams and boards.

- Be numbered among leaders who commit to making patient safety a leadership imperative by signing the We Lead for Safety pledge.

- Assess the safety culture of your organization by using either the online tool or the checklist included in the *Blueprint.*

- When choosing patient safety initiatives, make sure you take on a manageable number of efforts. The consensus of experts who created the *Blueprint* is that the journey to zero harm is best accomplished through systematic, small steps, which help to maintain motivation and prevent the process from being overwhelming.

- Recognize that even when the journey to patient safety is going well, periodic reassessments and even "reboots" in certain areas are extremely valuable. These pauses can be used to recalibrate organizational initiatives to account for progress made or to address new challenges, as well as assist with sustaining and revitalizing the improvements to date. The *Blueprint* and its organizational assessment can be used multiple time to focus conversations among senior leaders and boards and help define next steps for organizations.

All of the resources mentioned above can be found at: http://safety.ache.org/.

REFERENCES AND ADDITIONAL SOURCES

Agency for Healthcare Research and Quality. (2016). 2016 National Healthcare Quality and Disparities Report. Retrieved from https://www.ahrq.gov/research/findings/nhqrdr/nhqdr16/index.html

American College of Healthcare Executives & IHI/NPSF Lucian Leape Institute. (2017). *Leading a Culture of Safety: A Blueprint for Success*. Boston, MA: American College of Healthcare Executives and Institute for Healthcare Improvement.

Donaldson, M., Corrigan, J.M., & Kohn, L.T. (Eds.). (2000). *To Err is Human: Building a Safer Health System*. (Vol. 6). Washington (DC): National Academies Press.

Frankel, A., Graydon-Baker, E., Neppl, C., Simmonds, T., Gustafson, M., & Gandhi, T.K. (2003). Patient safety leadership WalkRounds. *Joint Commission Journal of Quality and Safety*, *29*(1), 16–26.

Frankel, A., Grillo, S.P., Pittman, M., Thomas, E.J., Horowitz, L., Page, M., & Sexton, B. (2008). Revealing and resolving patient safety defects: the impact of leadership WalkRounds on frontline caregiver assessments of patient safety. *Health Services Research, 43*(6), 2050–2066.

Garman, A.N., McAlearney, A.S., Harrison, M.I., Song, P.H., & McHugh, M. (2011). High-performance work systems in health care management, part 1: development of an evidence-informed model. *Health Care Management Review, 36*(3), 201–213.

Ginsburg, L., Norton, P.G., Casebeer, A., & Lewis, S. (2005). An educational intervention to enhance nurse leaders' perceptions of patient safety culture. *Health Services Research, 40*(4), 997–1020.

Goldenhar, L.M., Brady, P.W., Sutcliffe, K.M., & Muething, S. E. (2013). Huddling for high reliability and situation awareness. *BMJ Quality & Safety, 22*(11), 899–906.

Kachalia, A., Kaufman, S.R., Boothman, R., Anderson, S., Welch, K., Saint, S., & Rogers, M.A. (2010). Liability claims and costs before and after implementation of a medical error disclosure program. *Annals of Internal Medicine, 153*(4), 213–221.

Leonard, M., Graham, S., & Bonacum, D. (2004). The human factor: the critical importance of effective teamwork and communication in providing safe care. *Quality & Safety in Health Care, 13*(Suppl 1), i85–i90. http://doi.org/10.1136/qshc.2004.010033

McAlearney, A.S., Garman, A.N., Song, P.H., McHugh, M., Robbins, J., & Harrison, M. (2011). High-performance work systems in health care management, part 2: qualitative evidence from five case studies. *Health Care Management Review, 36*(3), 214–226.

McAlearney, A.S., Hefner, J., Robbins, J., & Garman, A.N. (2016). Toward a high-performance management system in healthcare, part 4: Using high-performance work practices to prevent central line-associated blood stream infections — a comparative case study. *Healthcare Management Review, 41*(3), 233–243.

Morello, R.T., Lowthian, J.A., Barker, A.L., McGinnes, R., Dunt, D., & Brand, C. (2013). Strategies for improving patient safety culture in hospitals: a systematic review. *BMJ Quality & Safety, 22*(1), 11–18.

Provost, S.M., Lanham, H.J., Leykum, L.K., McDaniel, Jr., R.R., & Pugh, J. (2015). Health care huddles: managing complexity to achieve high reliability. *Health Care Management Review, 40*(1), 2–12.

Robbins, J., & McAlearney, A.S. (2016). Encouraging employees to speak up to prevent infections: Opportunities to leverage quality improvement and care management processes. *American Journal of Infection Control, 44*(11), 1224–1230.

Rubin, M.S., & Stone, R.K. (2010). Adapting the "managing by walking around" methodology as a leadership strategy to communicate a hospital-wide strategic plan. *Journal of Public Health Management Practice, 16*(2), 162–166.

Schwendimann, R, Milne, J., Frush, K., Ausserhofer, D., Frankel, A., & Sexton, J.B. (2013). A closer look at associations between hospital leadership walkrounds and patient safety climate and risk reduction: a cross-sectional study. *American Journal of Medical Quality, 28*(5), 414–421.

Sexton, J.B., Adair, K.C., Leonard, M.W., Frankel, T.C., Prouix, J., Watson, S.R., Magnus, B., Bogan, B., Jamal, M., Schwendimann, R., & Frankel, A.S. (2018). Providing feedback following Leadership WalkRounds is associated with better patient safety culture, higher employee engagement and lower burnout. *BMJ Quality & Safety*, 27(4), 261–270.

Singer, S.J., Falwell, A., Gaba, D.M., & Baker, L.C. (2008). Patient safety climate in US hospitals: variation by management level. *Med Care, 46*(11), 1149–1156.

Singer, S.J., & Tucker, A.L. (2014). The evolving literature on safety WalkRounds: emerging themes and practical messages. *BMJ Quality & Safety, 23*(10), 789–800.