Published in final edited form as:

J Nurs Care Qual. 2018 ; 33(3): 263–271. doi:10.1097/NCQ.0000000000000298.

Examining Variation in Mental Models of Influence and Leadership among Nursing Leaders and Direct Care Nurses

Sallie J. Weaver, PhD, MHS [Associate Professor],

Dept. of Anesthesiology & Critical Care Medicine, and Armstrong Institute for Patient Safety & Quality, Johns Hopkins University School of Medicine, Baltimore, MD

Sarah E. Mossburg, MS, BSN, RN [Doctoral Student],

Johns Hopkins University School of Nursing, Baltimore, MD

MarieSarah Pillari, BSN, RN [Nurse Clinician IIM],

Johns Hopkins Hospital, Baltimore, MD

Paula S. Kent, MSN, MBA, RN [Patient Safety Coordinator for Strategic Partnerships], and

The Johns Hopkins Hospital and, The Armstrong Institute for Patient Safety and Quality

E Lee Daugherty Biddison, MD, MPH [Assistant Professor of Medicine]

Johns Hopkins University School of Medicine, Baltimore, MD

Abstract

This study explored similarities and differences in the views on team membership and leadership held by nurses in formal unit leadership positions and direct care nurses. We used mixed-methods and a maximum variance sampling strategy, sampling from units with both high and low safety behaviors and safety culture scores. We identified several key differences in mental models of care team membership and leadership between formal leaders and direct care nurses that warrant further exploration.

Keywords

bedside nurses; culture; leadership; nurse leaders; patient safety; teams

Our mental models are our cognitive maps of our world. Mental models are defined as "mental maps" (ie, organized knowledge structure) that enable individuals and teams to predict and explain their world, draw inferences, make predictions, understand or make sense of what they perceive, decide on actions to take, and learn from the experience of others.¹ They are critical lenses through which we filter our observations, interpret our actions and the actions of others, reason, and make evaluations.^{2,3} Team effectiveness,⁴ the amount of conflict the team experiences,⁵ team coordination,⁶ and patient outcomes,^{7,8} have been linked to the degree to which mental models are shared (ie, the degree to which team

Corresponding author: Sallie J. Weaver, PhD, MHS, Dept. of Anesthesiology & Critical Care Medicine, and Armstrong Institute for Patient Safety & Quality, Johns Hopkins University School of Medicine, 750 East Pratt Street | 15th Floor | Baltimore, MD, 21202, USA, sjweaver@jhu.edu | Phone: 410-637-6265.

The authors report no conflicts of interest.

members have similar or complementary mental models). Teams may develop shared mental models (SMMs) around the task and goals they are working toward; the technology, equipment, and tools that may be used toward these goals; the individual teammates comprising their team; and interactions (eg, roles/responsibilities, communication channels, interaction patterns and interdependencies, how information should vs. does flow).⁴ Teams play a critical role in health care delivery, and team training has shown a positive impact on a variety of outcomes including safety culture,⁹ surgical patient mortality,¹⁰ decreased delays in care,¹¹ and improved perceptions of teamwork.¹¹ A recent meta-analysis shows team training impacts a number of organizational outcomes including safety climate, patient outcomes, non-ICU length of stay, patient satisfaction and patient mortality.¹²

A sizeable body of literature has explored aspects of leadership in nursing. A 2010 systematic review suggested that leadership styles focused on relationships or people lead to better outcomes than transactional styles focused on task completion, although none of the studies included explicitly focused on quality or safety outcomes.¹³ More recent research explores the link between leadership style and quality and safety outcomes. For example, Wong et al demonstrated that the relationship between authentic leadership and nurse perceived quality of care was mediated through personal identification, trust in unit-level leadership, and work engagement.¹⁴ A 2013 systematic review focused specifically on nursing leadership and patient outcomes found support for the conclusion that relation-based leadership styles lead to decreased mortality and improved patient safety outcomes, specifically adverse events and complications.¹⁵

In the context of quality and patient safety improvement, mental models of leadership and influence likely play an important role in implementation and change management processes. They also likely shape perceptions of patient safety culture.^{16,17} However, little work to date examines nurses' mental models of organizational leadership and influence or how these mental models may differ between nurses in formal leadership positions and staff not in formal leadership roles. Therefore, we explored (1) who nurses identify as part of their team and organizational leaders, and (2) who nurses perceive as influencing quality and safety improvement efforts in their units. We aimed to assess and compare mental models of leadership and influence between nursing leaders and bedside nurses. Specifically, we explore similarities and differences in views of leadership, team structure, and safety practices between nurses in formal unit leadership positions and nurses not currently working in formal unit leadership positions. Our findings suggest important implications for both nursing and administrative leaders.

METHODS

Design and sample

A mixed-methods approach was used to investigate mental models of team structure, leadership and influence, and relationships with safety climate in a sample of nurses working in 2 large tertiary medical centers located in the Mid-Atlantic region of the US. Study participants included direct care nurses and nurses in leadership positions. Nurse leaders included Nurse Managers and those who have obtained Nurse Clinician III (NCIII) positions through a clinical ladder program.

Participating hospitals used the same survey to evaluate patient safety climate (the Safety Attitudes Questionnaire¹⁸) and hand hygiene compliance (trained secret observer) during the same time period. To ensure sampling of units with both high and low safety climate scores and safety practices (hand hygiene compliance), we used a 2 × 2 cluster sample strategy based on unit-level patient safety climate scores (high/low) and hand hygiene adherence (high/low) to identify a sampling frame of 8 eligible nursing units (2 units in each of the 4 high/low climate × high/low adherence groups). Specifically, work areas that scored within the highest and lowest quartiles on the safety culture domain on the SAQ survey and within the highest and lowest quartiles on hand hygiene performance within their respective institutions.

Of the 8 units invited to participate in the study, 7 agreed, including: 2 adult inpatient floor units, 2 adult intensive care units, 2 pediatric intensive care units, and 1 emergency department. The sampling frame helped to limit selection bias and ensure that units included in the study included units that varied in both patient safety climate and adherence to safety practices. Nursing leaders and a sample of nurses involved in direct patient care that were participating in a series of quality improvement (QI) focus groups in each unit were eligible to participate in the survey. All focus group participants (n = 69) completed the survey. This study was approved by the authors' University Institutional Review Board.

Measures and data collection

Participants completed a 17-item paper-based, investigator-developed survey, including: 4 items that asked respondents to identify whom they would describe as team members, leaders, and influencers in their unit; 4 open-ended items; and 8 demographic items. Survey questions were developed based on established methods used to evaluate mental models, a form of team cognition (see Wildman¹⁹ for a full review). Methods like those used in the present study have demonstrated predictive validity in previous studies.^{19,20}

Data analysis

Unadjusted quantitative data were analyzed using chi square test of proportions. Adjusted analyses were completed using logistic regression models controlling for age, unit tenure, and clustering of respondents within units. A Bonferroni corrected significance criteria ($p < .01$) was used to control for an increased probability of a type I error due to multiple statistical tests. We conducted qualitative thematic analysis of open-ended survey questions.

RESULTS

Identification of team members and leaders

Forty-four direct care nurses and 23 nurse leaders participated (Supplemental Digital Content, Table). The majority of respondents had a bachelor's degree in nursing (68%). Twenty-eight percent rotated between day and night shift, and the average unit tenure was 8.9 years (SD=8.7). Ninety-six percent of participants were women, and 25% identified as an ethnic minority. After controlling for respondent age and tenure in current unit, nursing leaders and non-leader respondents identified similar numbers of team members and leaders in each of 4 groups: (1) members of their care team (Leader group M = 7.17, Direct care

group $M = 6.11$, $p = .16$), (2) formal unit leaders (Leader group $M = 3.13$, Direct care group $M = 3.04$, $p = .82$), (3) informal unit leaders (Leader group $M = 4.34$, Direct care group $M = 3.95$, $p = .61$), and (4) senior hospital leaders (Leader group $M = 2.50$, Direct care group $M = 2.50$, $p = .86$).

Mental Models of Care Team: Core Members of Care Team in Unit—Most direct care nurse respondents indicated that the nurse manager, charge nurse, attending physician, fellow/resident, bedside nurse, nursing tech and physical or respiratory therapist were core members of the care team (Table). Nurse leaders' mental models of team makeup differed from those of the direct care nurses in 2 ways. First, the majority of nurse leaders (57%) included support associates in the group defining the core team. Additionally, a larger proportion of nurse leaders (13%) than direct care nurses (2%) included the Department Chair, nurse manager (74% leaders vs. 57% non-leaders), fellow/resident (91% leaders vs. 77% non-leaders), and support associate (57% leaders vs. 41% non-leaders) in their mental models of the core team, although these differences did not reach statistical significance due to sample size.

Mental Models of Leadership: Unit Leaders, Senior Hospital Leaders—In evaluating mental models of formal and informal unit-level leaders and senior organizational-level leaders, there were many similarities between the 2 groups; however, several important differences emerged between nurse leaders and direct care staff (Table). Formal leaders identified by the nurse leader group included primarily the nurse manager and attending physician. Less than half of nurse leader respondents identified the charge nurse as a formal leader. In comparison, a significantly larger proportion of direct care nurses included the charge nurse in their mental model of formal leadership (73%) compared to the nurse leaders (48%, $\chi^2 = 4.07$, $p = .04$).

In terms of influential employees, nurse leaders included the nurse manager, charge nurse, and bedside nurse in their mental models of influence, but few (35%) included attending physicians. In comparison, direct care nurses more often included the attending physician as influential team members in addition to the nurse manager, charge nurse, and bedside nurse. Additionally, a small proportion of nurse leaders identified senior hospital-level leaders (eg, the CEO) as influential in their work area, while none of the bedside nurse respondents included senior hospital-level leadership in their mental models of influence ($\chi^2 = 6.01$, $p = .01$).

The majority of nurse leaders and bedside nurse respondents identified the CEO and the Department Chair as senior organizational leaders. However, a larger proportion of bedside nurses identified leaders that traditionally serve at the unit-level like the unit nurse manager and charge nurse as senior hospital level leadership compared to nurse leader respondents.

There were also novel findings regarding roles that were not seen as leadership roles. Although few respondents in either group included bedside nurses as formal leaders, nurse leaders less often included bedside nurses (4% vs. 18%) and more often included others (35% vs. 2%) in their mental models of formal unit leaders. Importantly, nurse leaders were much more likely than direct care nurses to include other roles (eg director of nursing,

medical director, advance practice nurses) in their mental models of formal leadership (35% vs 2%), influential team members (35% vs 11%), and senior leaders (41% vs 5%).

Finally, after adjusting for differences between hospitals, nurses in leadership positions were significantly more likely to view the culture of safety in their unit as “above average” compared to direct care nurses (OR = 3.12, 95% CI: 1.02, 9.52).

Qualitative assessment of impact of leaders on safety culture

The qualitative data showed similarities in mental models about the perceived impact unit leaders have on safety culture between the 2 groups. When asked how the people they identified as formal leaders maintain or improve safety, the 2 groups shared common responses focusing on the traditional managerial responsibilities of human resources management and continuous QI. Typical responses from direct care nurses included formal leaders having an impact through committee work, enforcement of policies, and QI projects. Nurse leaders often described influencing unit safety culture through executive safety rounds, participation in the comprehensive unit based safety program (a structured safety improvement method that involves a designated team, regular meetings, and improvement tools), and providing support for direct care providers to voice their concerns. A nurse leader responded with, “Yes, they [executive level leaders] are part of the CUSP culture in the [unit] and attend safety rounds. They listen to staff concerns, share the leadership goals, and help compromise for an answer.”

One difference was that direct care nurses also indicated budgeting responsibilities in terms of allocation of resources (often staffing) as a way that formal leaders maintain or improve safety, which wasn’t addressed by nurse leaders. For example, a direct care nurse shared that “Formal leaders assign financial targets for the framework of our budget. We have strategic initiatives for the nursing department.”

When asked how important safety is to the people they identified as influential on their units, both groups reported that safety appeared to be very important to these employees. Direct care nurses from units with both high and low safety culture scores frequently reported that safety was the top priority on their unit. Since a large proportion of the direct care nurses indicated that staff nurses were influential leaders (75%), this response may serve to provide both their personal perspective of the importance of safety as well as their perspective of the feelings of other influential leaders. This question did, however, elicit some responses in both groups that indicated that safety might not always be the highest priority. From a direct care nurse: “Patient safety is [the] number 1 priority in [this unit] ... although a close number 2 is patient satisfaction, which sometimes overrides patient safety.” A nurse leader expressed a similar sentiment on a different unit: “[we would] rank safety as number 1, but [it] doesn't always translate in everyday practice.”

There were some differences in the responses between the bedside and leadership groups addressing the impact of senior leaders on safety culture. Over a third of the direct care nurses had difficulty answering what impact senior leaders had on safety culture in the hospital. A common response was either unsure, or not sure. One respondent wrote that senior leaders were “disconnected from our unit on a day to day [basis]” although several

direct care nurses reported an impact by senior leaders, most commonly through creation of policies and guidelines. Most nurse leaders identified senior leaders as having a positive impact on safety culture, frequently through supportive mechanisms such as facilitating change, listening, and advocating. There were, however, a few who indicated that safety culture was impacted more at the local level than from the executive level.

DISCUSSION

Overall, we found that direct care nurses and nurse leaders had relatively similar mental models of core care team members, leadership and influence, however several key differences emerged. This is important given research showing that leadership is a key factor for team performance.¹⁷ A significantly larger proportion of direct care nurses included charge nurses in their mental model of formal leadership compared to the nurse leaders. Additionally, a larger proportion of direct care nurses identified charge nurses in their mental models of senior leadership, while none of the nurse leader respondents included charge nurses as senior leaders.

These differences may reflect some distinctions in mental models of leadership and management between direct care nurses and nurse leaders. The charge nurse straddles the divide between staff and management, with NCIII's in the included hospitals expected to serve as the charge nurse during their direct care time. The charge nurse functions in a supervisory role and is expected to be knowledgeable about current policies, act as a resource for staff throughout the shift when questions arise, but typically does not have extensive managerial or human resources responsibilities. This lack of managerial and human resources responsibilities may be a possible reason that nurse leaders were less likely to identify charge nurses as formal leaders. This is in alignment with other research describing lack of role clarity and difficulty disentangling leadership from management responsibilities in the charge nurse position.^{21,22} The use of the term "formal" in our study may have triggered these respondents to identify positions that have more traditional formal managerial responsibilities.

Nurse leaders also consistently included a broader range of other roles in their mental models of the care team and leadership compared to direct care respondents. This suggests nurse leaders may have a broader definition of team membership and influence than direct care nurses. This could reflect the increased scope of the nurse leader roles, which likely expands their perspective on the team and increases interactions with organizational administrators.

Less than half of both respondent groups included any physician roles (department chair, attending physician, fellow/resident) as influential in their work area. This was an unanticipated finding. This may reflect our definition of influence as "who does your team rely on to get things done" or may reflect the scope of practice hierarchy. McComb et al found differences in mental models of patient care responsibilities between nurses and physicians with nurses reporting shared responsibility for several tasks physicians felt were their primary responsibility.²³ Given that there are differences in mental models of patient

care responsibilities between nurses and physicians, future research could further explore whether there are also differences in mental models of leadership and influence.

It is striking that 32% of direct care nurses and 17% of nurse leaders in our sample did not identify the hospital CEO as a senior organizational leader. This seems surprising in light of the traditional view that leadership is a primary responsibility of executive management.²⁴ This finding may illustrate a lack of knowledge about the role and responsibilities of the CEO, which is consistent with other research that found nurses had a lack of clarity about the roles and responsibilities of senior leaders.²⁵ One possible explanation for this gap may be a lack of engagement between executive level leaders and frontline staff. This is an important point, as several studies have shown that organizations perform better on indices of care quality and safety when they have better activation of senior executives in patient safety and quality and more personal connections with frontline staff.^{26,27}

Low engagement of senior hospital level administrators with direct care nurses and unit-level nurse leaders may also impact direct care nurses' understanding of how senior leaders impact safety culture. While participants provided clear responses to how formal leaders impacted safety, they seemed less able to draw the link when it came to senior organizational leaders. This was more pronounced in the direct care nurse responses than the nurse leader responses. Over a third of direct care nurse respondents did not answer the question or responded that they felt senior organizational leaders had little impact on safety culture. Hoyle highlighted that nurses frequently expressed the belief that senior leaders were more concerned with efficiency than with patient care.²⁵ Our findings may point to the limited exposure of direct care nurses to senior organizational leaders, especially direct care nurses who primarily work evening or alternative shifts. For example, a night-shift nurse who worked on the same unit for eleven years wrote "Senior leaders (CEO, Chairman) seem disconnected from our unit on day-to-day process[es]. I am sure they are more connected to the leadership team." Because direct care nurses regularly interface with the people they most commonly described as formal leaders (nurse managers, charge nurses, and attending physicians), they are better able to articulate how these people impact safety culture on their unit. The same nurse wrote in response to how formal leaders impact safety, "[our] assistant manager is vigilant about hand hygiene in this unit. We get lots of feedback from [them]."

Limitations

Our findings should be interpreted in light of several limitations. First, because this was an exploratory study using a mixed methods design, the sample size was small, limiting the statistical power of the quantitative portion of our study. Although our results did not reach statistical significance, they, along with our qualitative findings, indicated some interesting trends suggesting further exploration is warranted. Additionally, while face and content validity of our instrument was established, the reliability and predictive validity of the survey should be established in larger samples.

Implications for practice

As mentioned, previous research demonstrates a link between executive level engagement with front line staff and improved quality and safety outcomes.²⁶ Although our organization

has worked to increase the visibility and engagement between executive leaders and frontline staff, our results suggest limited clarity still exists for frontline staff about how executive leaders can impact patient safety. Despite deployment of initiatives designed to increase executive leader interactions with frontline staff (eg, the Comprehensive Unit-based Safety Program), regular interface between senior leaders and frontline staff is limited. Our findings suggest that senior leaders must go above and beyond to increase the transparency of their work so that direct care nurses are better able to link it to patient safety. Nurse managers are positioned to play a critical role in facilitating this transparency. As the formal leader with whom direct care nurses have the most frequent contact, nurse managers are uniquely positioned to communicate how executive leaders routinely impact patient safety. This may help expand direct care nurse understanding of patient safety at an organizational level. This is in alignment with the Nurse Manager competencies of relationship management, influencing others and strategic management published by the American Organization of Nurse Executives.²⁸

CONCLUSION

This study exploring similarities and differences in mental models of team structure and leadership between nurses in formal unit leadership positions and direct care nurses informs our understanding of the shared mental models of frontline staff and leaders. While the importance of effective team performance for care quality and safety have been demonstrated, limited work to date has empirically examined variation in mental models among nurses and nursing leaders. Future research should explore how differences in these models may be contributing to discrepancies in perceptions of patient safety culture and safety behaviors exhibited by staff. Additionally, future research should continue to explore the gap in nurse and nurse leaders understanding of the impact of senior leaders on patient safety.

Acknowledgments

This study was supported in part by a grant from the NIH NHLBI (K23HL098452 to the Johns Hopkins University) and a grant from the Johns Hopkins Institute for Clinical and Translational Research (ICTR), which is funded in part by Grant Number 1KL2TR001077-01 from the National Center for Advancing Translational Sciences (NCATS), a component of the National Institutes of Health (NIH), and NIH Roadmap for Medical Research. Its contents are solely the responsibility of the authors and do not necessarily reflect the official views of Johns Hopkins ICTR, NCATS, or NIH.

We gratefully acknowledge Michelle Eakin, Myles Leslie, and Cynthia Rand for their helpful feedback in the development of this work.

References

1. Cannon-Bowers, JA., Salas, E., Converse, SA. Shared mental models in expert team decision making. In: Castellan, NJ., editor. Current issues in individual and group decision making. Hillsdale, NJ: Erlbaum; 1993. p. 221-246.
2. Johnson-Laird, PN. Mental models: toward a cognitive science of language, inference, and consciousness. Cambridge, MA: Harvard University Press; 1983.
3. Johnson-Laird PN. Mental models and human reasoning. *Proc Natl Acad Sci U S A*. 2010; 107(43): 18243–18250. [PubMed: 20956326]

4. Mathieu JE, Goodwin GF, Heffner TS, Salas E, Cannon-Bowers JA. The influence of shared mental models on team process and performance. *J Appl Psychol.* 2000; 85(2):273–283. [PubMed: 10783543]
5. Ayoko OB, Chua EL. The importance of transformational leadership behaviors in team mental model similarity, team efficacy, and intra-team conflict. *Gr Organ Manag.* 2014; 39(5):504–531.
6. Stout RJ, Cannon-Bowers JA, Salas E, Milanovich DM. Planning, shared mental models, and coordinated performance: an empirical link is established. *Hum Factors J Hum Factors Ergon Soc.* 1999; 41(1):61–71.
7. Burtcher MJ, Manser T. Team mental models and their potential to improve teamwork and safety: a review and implications for future research in healthcare. *Saf Sci.* 2012; 50:1344–1354.
8. Westli H, Johnsen B, Eid J, et al. Teamwork skills, shared mental models, and performance in simulated trauma teams: an independent group design. *Scand J Trauma Resusc Emerg Med.* 2010; 18(1):47. [PubMed: 20807420]
9. Thomas L, Galla C. Building a culture of safety through team training and engagement. *BMJ Qual Saf.* 2013; 22(5):425–434.
10. Neily J, Mills PD, Young-Xu Y, et al. Association between implementation of a medical team training program and surgical mortality. *JAMA.* 2010; 304(15):1693–1700. [PubMed: 20959579]
11. Wolf FA, Way LW, Stewart L. The efficacy of medical team training: improved team performance and decreased operating room delays. *Trans Meet Am Surg Assoc.* 2010; 128(3):71–80.
12. Hughes AM, Gregory ME, Joseph DL, et al. Saving lives: a meta-analysis of team training in healthcare. *J Appl Psychol.* 2016; 101(9):1266–1304. [PubMed: 27599089]
13. Cummings GG, MacGregor T, Davey M, et al. Leadership styles and outcome patterns for the nursing workforce and work environment: A systematic review. *Int J Nurs Stud.* 2010; 47(3):363–385. [PubMed: 19781702]
14. Wong CA, Spence Laschinger HK, Cummings GG. Authentic leadership and nurses' voice behaviour and perceptions of care quality. *J Nurs Manag.* 2010; 18(8):889–900. [PubMed: 21073563]
15. Wong CA, Cummings GG, Ducharme L. The relationship between nursing leadership and patient outcomes: A systematic review update. *J Nurs Manag.* 2013; 21(5):709–724. [PubMed: 23865924]
16. Wong CA, Cummings GG. The influence of authentic leadership behaviors on trust and work outcomes of health care staff. *J Leadersh Stud.* 2009; 3(2):6–23.
17. Kalisch BJ, Weaver SJ, Salas E. What does nursing teamwork look like? A qualitative study. *J Nurs Care Qual.* 2009; 24(4):298–307. [PubMed: 19755879]
18. Sexton JB, Holzmüller CG, Pronovost PJ, et al. Variation in caregiver perceptions of teamwork climate in labor and delivery units. *J Perinatol.* 2006; 26(8):463–470. [PubMed: 16775621]
19. Wildman JL, Salas E, Scott CPR. Measuring Cognition in Teams. *Hum Factors.* 2014; 56(5):911–941. [PubMed: 25141596]
20. Marks MA, Zaccaro SJ, Mathieu JE. Performance implications of leader briefings and team-interaction training for team adaptation to novel environments. *J Appl Psychol.* 2000; 85(6):971–986. [PubMed: 11125660]
21. Carlin A, Duffy K. Newly qualified staff's perceptions of senior charge nurse roles. *Nurs Manage.* 2013; 20(7):24–30.
22. McCallin AM, Frankson C. The role of the charge nurse manager: A descriptive exploratory study. *J Nurs Manag.* 2010; 18(3):319–325. [PubMed: 20546472]
23. McComb SA, Lemaster M, Henneman EA, Hinchey KT. An evaluation of shared mental models and mutual trust on general medical units: Implications for collaboration, teamwork, and patient safety. *J Patient Saf.* 2015 [epub ahead of print].
24. Giffith, JR. *The Well-Managed Healthcare Organization.* Fourth. Chicago: Health Administration Press; 1999.
25. Hoyle L. Nurses' perception of senior managers at the front line: People working with clipboards. *J Adv Nurs.* 2014; 70(11):2528–2538. [PubMed: 24684696]

26. Keroack MA, Youngberg BJ, Ceresse JL, Krsek C, Prellwitz LW, Trevelyan EW. Organizational factors associated with high performance in quality and safety in academic medical centers. *Acad Med.* 2007; 82(12):1178–1186. [PubMed: 18046123]
27. Sexton JB, Sharek PJ, Thomas EJ, et al. Exposure to Leadership WalkRounds in neonatal intensive care units is associated with a better patient safety culture and less caregiver burnout. *BMJ Qual Saf.* 2014; 23(10):814–822.
28. American Organization of Nurse Executives. AONE Nurse Manager Competencies. Chicago, IL: 2015.

Table

Identified Members of Care Team, and Formal, Influential and Senior Leaders

Response Category	Core Team Members (%)		Formal Leaders in Work Area (%)		Influential (%)		Senior Leaders (%)	
	Leader (n = 23)	Non-leader (n = 44)	Leader (n = 23)	Non-leader (n = 44)	Leader (n = 23)	Non-leader (n = 44)	Leader (n = 23)	Non-leader (n = 44)
CEO	4	0	1.94	0	5	1.08	13	0
Department Chair	13	2	3.12	39	25	1.44	9	5
Nurse Manager	74	57	1.89	96	95	0.00	78	57
Charge Nurse	95	89	0.83	48	73	4.07	78	89
Attending Physician	96	86	1.39	78	66	1.11	35	48
Fellow/resident	91	77	2.02	13	14	0.00	39	41
Students	30	27	0.07	0	0	NA	13	7
Bedside nurse	100	98	0.53	4	18	2.49	74	75
Nursing technician	65	64	0.02	0	2	0.53	22	36
Support associate	57	41	1.48	0	2	0.53	22	14
Physical or respiratory therapy	65	59	0.24	0	2	0.53	26	14
Other ^{a,b}	30	11	3.74	35	2	13.73*	35	11
							5.30	41
							5	13.96*

Note. Fisher's exact tests were also conducted given low n's for some cells, results were not meaningfully different from findings reported here.

^a Other core team: Neonatal Nurse Practitioner, case coordinator, social worker, home care coordinator, patient safety nurse, case manager, nurse practitioner, clinical nurse specialist, nutritionist, assistant nurse manager, Clinical Customer Service Coordinator & Representative

^b Other influential and senior leaders: Neonatal nurse practitioner, case manager, clinical mentor, nurse clinician III, director of nursing, assistant director of nursing, department specific nursing director roles (e.g. surgery), medical director, clinical nurse specialist, assistant nurse manager, vice president of patient care, chief nurse officer, president, Comprehensive Unit-based Safety program (CUSP) executives, and Vice President of nursing

* p < .01.