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Nurse-Driven Programs to Improve Patient Outcomes

Transforming Care at the Bedside, Integrated Nurse Leadership Program, and the Clinical Scene Investigator Academy

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As the national quality agenda continues to be a key driver in healthcare, more programs are being developed to teach staff nurses how to lead quality change projects. Nurses are in a unique position to do this work; however, they may lack project management and leadership skills to do so. The authors provide a content analysis that compares and contrasts 3 such programs.

The United States spends 16% of its economic output on healthcare, yet its outcomes are far lower than those of most industrialized nations.[1] In the past, hospital and health system nursing departments have held a narrow view of conducting quality improvement work.[2] Nurses were included in safety and quality in 1 of 3 ways: (1) conducting retrospective chart audits as part of their job responsibilities, to review care given by other RNs, (2) reporting adverse incidents or errors through incident reports, and (3) changing their practice when new policies and procedures were initiated on their unit or hospital. More recently, there has been a significant move toward teaching nurses about safety and quality and how they impact patient outcomes with nursing interventions.[3] Most formal quality work was left to individuals in the organization's quality department, which may or may not have included RNs in key leadership positions.

We are now at a point where everyone needs to know basic quality and safety language and methods, as well as how to lead teams to identify and implement improvements that make patients safer. Recently, programs have emerged that teach nurses not only about quality but also how to conduct and lead these projects from their inception to implementation: RNs who want to lead this work need new professional skill sets. The effective application of the concepts for improving patient safety and quality coupled with these new skills is key to the success of these programs.

Three programs that teach and coach staff nurses to identify a quality problem on their unit and lead improvement work related to the identified problem are Transforming Care at the Bedside (TCAB),[4] Integrated Nurse Leadership Program (INLP),[5] and the Clinical Scene Investigator (CSI) Academy.[6] The TCAB is a national program, the INLP is conducted in northern and central California, and the CSI Academy has a regional catchment and includes organizations in 6 counties in Missouri and Kansas in the Greater Kansas City area.

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Transforming Care at the Bedside

The TCAB is set apart from other traditional quality improvement programs in that it focuses and engages frontline staff and unit managers.[7] By the end of the TCAB program, participating units should have 1 or more process improvements in place that improve the quality of patient care, improve the quality of patient services, have more effective care teams, improve staff satisfaction/retention, and have greater efficiency.

Funding

The TCAB was initially funded by the Robert Wood Johnson Foundation (RWJF)[8] and the Institute for Health Care Improvement,[9] 2 national leaders in improving the lives of patients and healthcare workers through various funding mechanisms and projects. Hospitals are selected based on a competitive application and must commit human and organizational resources to measurably improve a targeted patient outcome. Teams are interdisciplinary; however, staff nurses are an integral part of these teams. A by-product of these projects is to "grow" nursing leadership and help develop skill sets to lead future hospital initiatives after the formal TCAB program has been completed.

Curriculum

The curriculum is framed by 4 tenets: safe and reliable care, vitality and teamwork, patient-centered care, and value-added care processes. The fundamental essence of the TCAB is that frontline caregivers, and particularly staff nurses, can identify problems on their units, develop testable strategies for improvement, and develop their leadership skills to lead further system change. The TCAB teams are tasked with identifying goals related to improving quality care, generating ideas, and engaging others in their projects. The TCAB curriculum usually begins with the "deep dive." This involves a lengthy brainstorming session where participants discuss the work processes, as well as ideas for improving bedside care. Ideas are then selected and tested using the Plan-Do-Study-Act cycle. After the change is tested and analyzed on a small scale, the goal of the TCAB is to disseminate the best changes across all units.

Projects

The formal TCAB initiative began in July 2003 and ended in August 2008, with a total of 10 participating hospitals. Examples of projects that have proved successful and cut across several of the basic tenets include the use of "rapid response teams" to intervene with patients before a crisis occurs, the implementation of specific communication models designed for consistent and clear communication, professional support programs (ie, preceptorships), liberalized diet plans, and a redesigned workspace to enhance efficiency and reduce waste.[4] In January 2007, the American Organization of Nurse Executives received a 2-year grant from the RWJF and expanded the TCAB initiative to include 67 more hospitals, with projects such as standardized vital sign sheets, color-coded cards to indicate patient chart location, and having nurses present the patients to begin morning rounds.[10] In addition, on August 31, 2009, the American Organization of Nurse Executives announced another round of hospitals participating in the TCAB initiative, which continue their work until 2011. This project includes 32 hospital units and an additional 20 hospitals that will participate via virtual learning.[11] More information about TCAB can be found at www.ihi.org/IHI/Programs/StrategicInitiatives/TransformingCareAtTheBedside.htm.[4]

Integrated Nurse Leadership Program

The goal of the INLP is that all participants will be able to look at any clinical or operational problem and know how to lead improvement change. The core curricular components include the following skills: communication, project management, team building, managing change, leadership, and critical thinking. Quality improvement science is the overarching framework for the teams' project work.

Funding

The INLP was funded by the Betty Irene Moore Nursing Initiative, part of the Moore Foundation located in the San Francisco Bay area.[12] Funding was obtained for this project and is administered and managed by the Center for Health Professions[13] at the University of California at San Francisco. The initial funding period was 16 hospitals at $5.8 million for 3 years. A second round of funding of $6.5 million will sustain the program through 2011 and includes the training of 8 additional hospitals in a separate quality improvement outcome and funding the emergence of a professional society for nurses.[14]

Curriculum

The 6 core competencies that drive the program are communication, project management, team building, managing change, leadership, and critical thinking. Quality improvement science is the overarching framework for the teams' project work. The curriculum is delivered by off-site seminars, onsite mentoring, conference calls, and monthly assignments.

Each cohort has 25 person teams, with each having 7 to 10 members who serve as that site's

core resource team, with each unit developing unit-based teams. Teams report to the core resource team, who mentors and coaches them. All sessions fall within one of these overarching program areas: change = individual + team + culture + process.

The INLP process starts with an identified problem from frontline clinicians or through review of outcome data already collected within the organization. Once a focus area has been selected and a team has been established, the next steps involve researching best practices. The best practice is segmented into measurable process and outcome steps, and finally, a target outcome goal is established. After this phase of development, the applied curriculum begins. During these training sessions, ideas are generated using a Plan-Do-Study-Act and leadership approach to establish the next test of change. Once a test of change has demonstrated some efficacy, it is broadened in scope and moved across the unit and, if applicable, to other units. Executives and team leaders attend a joint introduction seminar whose focus is heightening awareness for the need for nursing-initiated quality improvement and leadership development. Team leaders also participate in a seminar focused on team building. All team members then attend 8 seminars for 18 months (two 2-day seminars and 6 daylong seminars). Seminars consist of a varied interactive curriculum taught by the program team and outside leadership consultants with time for facilitated quality improvement project work.

On-site mentoring is provided by a senior consultant who assists the teams by attending team meetings, consulting and guiding team leads, and acting as a liaison to the INLP development team. Monthly assignments are tracked by the INLP staff and teams participate in facilitated conference calls with other hospital teams who were participating in the INLP with similar quality improvement foci.

Projects

Four cohorts of 8 hospitals in the San Francisco Bay were included in the 2 rounds of funding, and staff nurses were recruited to participate. This initial group of hospitals focused on a common goal, which is reducing medication errors within their system, although each cohort had the flexibility to create the best strategy for their unit. The second group of hospital teams is focusing on improving mortality rates from early recognition of sepsis. This work is in progress and is set to be completed in May 2011.

CSI Academy

The overall goals of the CSI Academy are to create sustainable process change, to sustain these improve-ments over time, and to determine how to spread the improved process throughout the organization. At the end of the program, the CSIs should be able to lead unit-based change and understand program evaluation and basic data analysis.

Funding

The CSI Academy is 1 of 2 inaugural programs started after the launch of the Bi-State Nursing Workforce Innovation Center, located in Kansas City, Missouri. The Bi-State Center is funded by the Health Care Foundation of Greater Kansas City, Missouri,[15] and the REACH Healthcare Foundation in Kansas City, Kansas,[16] and has obtained additional funding from Children's Mercy Hospitals and Clinics,[17] as well as the RWJF Executive Nurse Fellow Program. In 2008, at the time of its launch, the center received 1 of 10 Partnership in Nursing grants from the Northwest Health Foundation[18] and the RWJF.[8] Similar to both the TCAB and the INLP, the overarching goal of the CSI Academy is to teach staff nurses how to develop new leadership skills and use those skills to impact their units through innovative change.

Curriculum

The framework of the CSI Academy uses the Institute of Medicine's 6 aims for highly effective organizations: patient safety, effectiveness, patient-centeredness, timeliness, efficiency, and equitability.[19] This framework provides a powerful yet succinct way to structure the work conducted by the center. Equally important, this provides a sustained focus, making innovation central to the work, coupled with the expectation that deliverables are based on translating this innovation to valued nurses and consumers. Clinical scene investigator teams consist of 2 to 4 staff nurses who participate in a series of 9 didactic classes over a 16-month timeframe. These sessions include training in leadership skills, social entrepreneurship, project implementation and evaluation, and data collection and analysis and provide the nurses with the necessary support and skills to implement their change idea. Each team creates an innovative solution to a specific quality care issue at their institution. These changes are designed to be implemented and tested on a small scale before a decision is made to spread the change to other units.

Projects

Various projects are underway in 7 acute care settings: increasing RN certification, decreasing pressure ulcers (PUs), decreasing heel ulcers, reducing the length of time from emergency department to hospital admission, improving hand-offs at change of shift, creating a Professional Practice Council on an

identified unit, and reducing pain in hospitalized children. Although the main focus is on patient-level outcomes, each project site must identify a secondary organizational outcome to measure, such as nurse or patient satisfaction. For the patient-level outcomes, basic econometric methods will be applied to translate the savings to each organization once the innovation is fully implemented within the unit.

Each team was assigned an external coach to facilitate their projects. The external coach has expertise related to the CSI project and was selected from current nursing leaders within the community-at-large, where no conflict of interest with the CSI site would exist. In addition, each CSI team was assigned an internal mentor by their chief nursing officer. The internal mentor must be at director level or above and provide general support and assistance to the CSIs particularly as it relates to successfully coordinating with other departments within their organization.

Comparison of Programs

Common Threads Across Programs

The central tenet of these 3 programs is to teach, coach, and mentor staff nurses in how to identify problems and lead significant change. Each hospital or unit deploys a team of frontline clinicians with senior executives who support the project in varying ways. The programs are designed to lead clinicians through an entire process of quality improvement, during which participants learn to innovate, test innovations, diffuse innovations throughout the hospital, and embed innovations in hospital policies and daily practice. Common threads among the programs are the following:

- Teach staff nurses new skills and competency in leading change and quality improvement
- Projects *led* by staff nurses
- Empower the nurses to problem solve and find solutions
- Use "bottom-up" organizational change theory

Unique Components of Each Program

A summary of the unique components of each program can be found in Table 1.

Transforming Care at the Bedside

The TCAB teams are multidisciplinary, including staff nurses, physicians, and unit-level ancillary staff. Patient volunteers and/or family members are also encouraged to be members of the core team. An important feature of the TCAB program is the deep dive, a long brainstorming session conducted at the beginning of the process and aimed at generating

Table 1. *Unique Program Components*

Program	Unique Components
Transforming Care at the Bedside	Deep dive and snorkels
Integrated Nurse Leadership Program	Core competencies
	Multiple unit teams reporting up to a central peer steering committee
Clinical Scene Investigator Academy	Presentation at a regional workforce conference

ideas. Shorter sessions, known as "snorkels," are conducted on a weekly or monthly basis.

Integrated Nurse Leadership Program

The INLP is also interdisciplinary, but it focuses on teaching new skills to staff nurses. These skills stretch beyond healthcare education and draw on developing general leadership, business, and political savvy. Nurses are taught specific knowledge slices, such as strategic marketing, and these sessions are taught by business professionals. The belief is that certain skills and abilities are universally required to be successful and are typically not part of the nursing educational set (eg, strategic communications, formal and informal influence, change management, leadership vs followership).

CSI Academy

Projects are developed by the staff nurses and approved by the organization; however, the criteria for the selection of a CSI team is that the organization commits to (*a*) identifying and improving a process within a specific unit that includes a patient-level outcome, (*b*) creating a sustainable process that could be "scaled" up to other units within the organization, and (*c*) be willing to share their quality improvement projects at the inaugural Nursing Workforce Innovation Conference to be held at the end of the program. This forum will be highly interactive for participants to leave with information on how to modify the projects for their own organization.

In terms of cost savings, the overall impact is not yet known. However, 2 of the CSI teams are working on the reduction of PUs. It is estimated by the Centers for Medicare and Medicaid Services that a secondary diagnosis for a PU costs $43,180 per hospital stay.[20] A secondary diagnosis is the critical issue in that if a patient acquires a PU after admission, the Centers for Medicare and Medicaid Services will not pay for the cost of this adverse event.[21] Each CSI team is targeting a reduction of at least 50% in their PU rates. The savings to the institution

will be calculated based on the numbers of PU reduced. A different CSI team is redesigning their patient care teams with changes in full-time equivalents. As part of their project, they will calculate before and after full-time equivalent costs to demonstrate the economic impact of their project.

Program Outcomes

Transforming Care at the Bedside

The TCAB has shown several important outcomes during the formal initiative. Between 2004 and 2006, the percentage of time that RNs spent in direct patient care increased from 40% to more than 50%. In addition, the average turnover rates for RNs and advanced practice nurses decreased from 15% in 2004 to less than 5% after 2 years.[22]

Since the TCAB began, several articles have been published detailing its outcomes. One institution adapted TCAB for an ambulatory setting with considerable success, including reduction in patient wait times, an increase in patient and staff satisfaction by 30 percentiles, and a shortened turnaround time for laboratory results.[23] Another article showed that the implementation of liberalized diet plans led to dieticians spending more time on patient education and a greater collaboration between nurses, dieticians, physicians, and the speech pathology staff.[24]

Integrated Nurse Leadership Program

Accurate medication administration errors were collected at the start of the program, at 6 months, and at 18 months. Accuracy improved from 85% to 92% and to 96%, respectively. In addition, there were 6 "steps" promoted in the INLP curriculum to ensure safe administration of medication. Adherence to the 6 steps improved from 4.8% of the time to 5.75% of the time. The INLP chose these 6 safety processes based on their endorsement by the California Nurse Outcome Coalition, a collaborative alliance for nursing outcomes. The California Nurse Outcome Coalition derived the processes from evidence-based literature. Participants were asked to rate the value of senior consultants on a 5-point Likert scale, with 0 being "not at all valuable" and 5 being "extremely valuable." Ninety-five percent (n = 56) rated their value as "extremely valuable" or "valuable."

CSI Academy

Baseline clinical and organizational outcomes have been collected, and the projects are being implemented, led by the staff nurse CSIs. Outcomes will be collected and compared with those at baseline at 6 and 9 months after implementation.

Evaluation Methods

All 3 programs are evaluated using formative and summative methods. The program outcomes are measured based on whether objectives were met. In addition, each session of the didactic education is evaluated, typically based on criteria set by the oversight body that provides continuing education credits. Individual project outcomes are measured at specific points in time and the differences are reported in that unit of measure (percentages, rates, frequencies, etc).

Implications

These programs and others like them that leverage the frontline clinician suggest that frontline nurses and other hospital-based staff are well positioned to improve patient care and safety processes on hospital patient units. Frontline clinicians have the unique opportunity to see what is and is not working in the direct provision of patient care. By catching, correcting, and removing the underlying causes of suboptimal care processes, frontline clinicians can contribute positively to patient safety and quality. Given the training, resources, and authority, frontline clinicians are well poised to lead hospitals in broad-based improvement processes. Unfortunately, too often, hospitals fail to actively involve staff nurses and other frontline clinicians in quality improvement initiatives.

Work to date suggests that many frontline nurses and clinicians lack the skills, initiative, and time to participate effectively in quality improvement activities. To make significant progress on patient safety issues, these programs suggest that hospitals need to invest in developing the skills of frontline clinicians, and when they do, significant changes can move forward.

Conclusion

It is vital that all providers fully grasp the importance of how their profession impacts quality outcomes. This is not only a professional issue but a fiscal one as well. In 2009, Denham[25] published a compelling article, "The No Outcome–No Income Tsunami Is Here: Are you a Surfer, Swimmer, or Sinker?" in the *Journal of Patient Safety* using this analogy to explain why organizations that use innovation in their quality work as the central focus will not only survive but also thrive even during these uncertain economic times. Arguably, nurses are the largest unleveraged asset in healthcare, but these programs point to the reality that to activate this resource, hospitals will need to position nurses differently in the

value chain, provide them with organizational change skills and evidenced-based strategies, call them out to the task of being responsible for systemic quality, and allow them the freedom to act at the unit level.

Programs like these three provide a viable template for those who want to conduct similar work, regardless of geographic boundaries.[26] Members of the C-suite, in particular, chief nursing officers, must create the environment and culture that empowers staff to address safety and quality issues at the bedside. Only then can our long-term strategy of improving the industry genuinely flourish.

References

1. The Economist. Reforming American health care: heading for the emergency room. *The Economist.* 2009;391(8637):75-77.
2. Needleman J, Hassmiller S. The role of nurses in improving hospital quality and efficiency: real-world results. *Health Aff.* 2009;28(4):w625-w635.
3. QSEN: quality and safety education for nurses. Available at www.qsen.org. Accessed September 25, 2009.
4. Transforming Care at the Bedside. Available at www.ihi.org/IHI/Programs/StrategicInitiatives/TransformingCareAtTheBedside.htm. Accessed September 25, 2009.
5. Integrated Nurse Leadership Program. Available at www.futurehealth.ucsf.edu/Public/Leadership-Programs/Program-Details.aspx?pid=35&pcid=53. Accessed September 25, 2009.
6. Clinical Scene Investigator Academy. Available at www.nursinginnovation.org/programs. Accessed September 25, 2009.
7. The Robert Wood Johnson Foundation. The Transforming Care at the Bedside (TCAB) toolkit. Available at http://www.rwjf.org/qualityequality/product.jsp?id=30051. Accessed October 13, 2009.
8. The Robert Wood Johnson Foundation. Health and health care improvement. Available at www.rwjf.org. Accessed September 25, 2009.
9. Institute for Healthcare Improvement Web site. Available at www.ihi.org. Accessed September 25, 2009.
10. Farrell B, Pomrenke B, Heinzel J, Stefancyk A. Transforming Care at the Bedside: three hospitals' journey. *Voice of Nursing Leadership.* 2008:8-9. Available at http://www.aone.org/aone/aonetcab/Voice–November%202008–TCAB%20article.pdf. Accessed September 25, 2009.
11. Riley V. AONE announces participating hospitals for new Transforming Care at the Bedside (TCAB) dissemination initiative. The American Organization of Nurse Executives. Available at http://www.aone.org/aone/about/2009PressReleases/082109.html. August 21, 2009. Accessed September 25, 2009.
12. Betty Irene Moore Nursing Initiative. Gordon and Betty Moore Foundation. Available at www.moore.org/nursing.aspx. Accessed September 25, 2009.
13. Center for the Health Professions Web site. Available at www.futurehealth.ucsf.edu. Accessed September 25, 2009.
14. Regional Nurse Network Web site. Available at http://thecenter.ucsf.edu/Program/Default.aspx?tabid=819. Accessed September 25, 2009.
15. Health Care Foundation of Greater Kansas City Web site. Available at www.healthcare4kc.org. Accessed September 25, 2009.
16. REACH Healthcare Foundation Web site. Available at www.reachhealth.org. Accessed September 25, 2009.
17. Children's Mercy Hospitals and Clinics Web site. Available at www.childrensmercy.org. Accessed September 25, 2009.
18. Northwest Health Foundation Web site. Available at www.nwhf.org. Accessed September 25, 2009.
19. Institute of Medicine. *To Err Is Human: Building a Safer Health System.* Washington, DC: National Academies Press; 2000.
20. Armstrong DG, et al. *New Opportunities to Improve Pressure Ulcer Prevention and Treatment: Implications of the CMS Inpatient Hospital Care Present on Admission (POA) Indicators/Hospital-Acquired Conditions (HAC) policy. A Consensus Paper From the International Expert Wound Care Advisory Panel.* 2008. Available at http://www.medline.com/OpportunitiestoImprovePressureUlcerPreventionandTreatment.pdf. Accessed January 19, 2010.
21. Centers for Medicare and Medicaid Services. Overview: hospital acquired conditions (present on admission indicator). Available at www.cms.hhs.gov/HospitalAcqCond/01_Overview.asp#TopOfPage. Accessed October 13, 2009.
22. The Robert Wood Johnson Foundation and the Institute for Healthcare Improvement. A new era in nursing: Transforming Care at the Bedside. Available at www.aone.org/aone/pdf/TCABBrochure.pdf. Accessed September 25, 2009.
23. Lorenz H, Greenhouse P, Miller R, Wisniewski M, Frank S. Transforming care at the bedside: An ambulatory model for improving the patient experience. *J Nurs Adm.* 2008;38(4):194-199.
24. Scott-Smith JL, Greenhouse PK. Transforming care at the bedside: patient-controlled liberalized diet. *J Interprof Care.* 2007;21(2):179-188.
25. Denham CR. The no outcome-no income tsunami is here: are you a surfer, swimmer, or sinker? *J Patient Safety.* 2009;5(1):42-52.
26. Rother J, Lavizzo-Mourey R. Addressing the nursing workforce: a critical element for health reform. *Health Aff.* 2009;28(4):w620-w624.