

CLINICAL PRACTICE

Charting the course for American Nurses Credentialing Center–Approved perioperative nurse-sensitive indicators

Mary Shepherd, Nina Hawthorne*

Houston Methodist Hospital, Houston, Texas, United States

Received: July 9, 2017

DOI: 10.5430/jnep.v8n5p63

Accepted: August 14, 2017

URL: <https://doi.org/10.5430/jnep.v8n5p63>

Online Published: December 20, 2017

ABSTRACT

The current health care environment, with increasing public awareness of and attention to patient safety, mandates the delivery of exceptional quality care. To meet the health care requisites of the perioperative patient population, clinical nurses have identified the need for nurse-sensitive clinical indicators for this setting. We describe the strategies used to identify, obtain American Nurses Credentialing Center approval for, and integrate nurse-sensitive indicators into the perioperative setting to advance a Magnet culture. Prior to this, nurse-sensitive indicators for the perioperative setting that enabled nurses to monitor and improve patient care outcomes, in accordance with the standards of a Magnet-recognized hospital, had not been formally established. A review of the literature yielded a list of potential metrics, which included normothermia, patient falls with harm, and retained surgical items. Methodology and data collection processes for these metrics were established, facilitating quarterly Nursing Dashboards and collaboration among nurses to improve patient outcomes. This groundbreaking initiative enables nurses to routinely evaluate whether the structures and processes of care effectively yield quality outcomes. This foundational work has broader implications for nursing practice, because these quality metrics can easily be translated into perioperative settings in other health care organizations.

Key Words: Nurse-sensitive indicators, Nursing Dashboard, Perioperative nursing, Magnet standards, Quality monitoring

1. INTRODUCTION

The Magnet Recognition Program sets high expectations for health care organizations to deliver superior quality and safe care that yields exemplary patient outcomes. Acute care nurse-sensitive clinical indicators have been established since the 1990s.^[1] In 2015, the American Nurses Credentialing Center (ANCC) established new requirements that began to integrate these metrics into ambulatory and outpatient nursing practice environments.^[2] To meet the health care requisites of the perioperative patient population, clinical

nurses have identified the need for nurse-sensitive clinical indicators for this setting. The goal of this initiative was therefore to establish nurse-sensitive clinical indicators for the perioperative setting to facilitate clinical nurse monitoring, evaluation, and improvement of patient care outcomes.

Perioperative nurse-sensitive clinical indicators are crucial in leveraging the hospital's Magnet culture to continue to advance performance related to quality, safety, patient-centered care, and efficiency. Measures of quality in health care require structures and processes that support outcomes.^[3] Iden-

*Correspondence: Nina Hawthorne; Email: NRHawthorne@houstonmethodist.org; Address: Houston Methodist Hospital, Houston, Texas, United States.

tifying and defining a unique set of quality indicators promotes consistency in how quality is evaluated.^[3] A unique set of indicators and measurement methodologies provides nurses a tool by which to monitor safe practices and drive improvements that mitigate adverse events.^[3]

Houston Methodist Hospital embraces evidence-based decision-making. The hospital’s Professional Practice Model (see Figure 1) is grounded by evidence-based practice, research, and innovation. The “Foundation of Professional Practice” that guides the model includes service, quality, and practice standards. Implementation of the model requires that nurses have defined quality metrics and data. The acute care nursing units had quality data readily available through a centralized Nursing Dashboard; however, this had not been established for the perioperative setting. In this article, we describe the processes used to establish ANCC-approved nurse-sensitive indicators and integrate a Nursing Dashboard

in the perioperative setting.

2. BACKGROUND AND SIGNIFICANCE

Internationally, the current health care environment, which is driven by increasing public awareness and attention to patient safety and declining reimbursement resulting from value-based purchasing and increasing regulatory demands, mandates the delivery of exceptional quality care.^[4] Magnet designation, is an international accreditation offered to organizations around the world. Additionally, in a Magnet-recognized organization, where shared governance is practiced, it is imperative that nurses and other health care professionals have access to data to improve patient outcomes. In order to meet the health care needs of all patients seeking care from this hospital, clinical nurses identified the need to establish nurse-sensitive clinical indicators for the perioperative patient population.

HOUSTON METHODIST PROFESSIONAL PRACTICE MODEL

Leading the World of Nursing

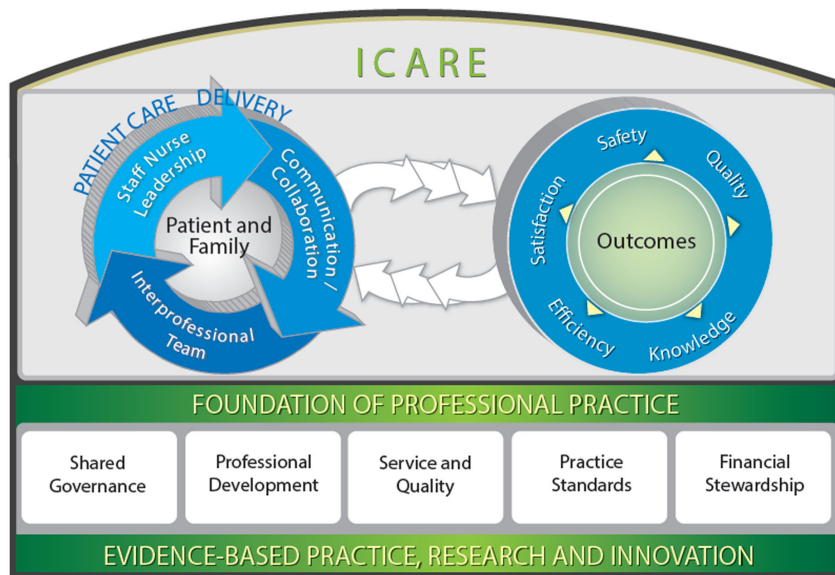


Figure 1. Houston Methodist Hospital Professional Practice Model

An extensive literature review revealed limited information on perioperative nurse-sensitive clinical indicators. The review included articles and other sources from professional ambulatory organizations, such as the American Academy of Ambulatory Care Nursing (AAACN)^[5] and the Collaborative Alliance for Nursing Outcomes (CALNOC), and the perioperative arena. Although organizations such as the American Peri-Operative Registered Nurses (AORN),^[6] the American Society of Peri-Anesthesia Nurses (ASPAN),^[7] and the American Society of Anesthesiologists (ASA)^[8,9] have recommended standards and practice guidelines, no

specific nurse-sensitive clinical indicators were found on these organizations’ websites. In addition to the literature review, numerous regional and national Magnet hospitals were queried. This exercise revealed a few select process metrics; however, the intent was to identify outcome-focused, nurse-sensitive clinical indicators. Counsel was also sought from AORN’s local executive leadership, who confirmed that outcome metrics in the perioperative setting had not been established. Internally, the senior outcomes analyst and National Database of Nursing Quality Indicators (NDNQI) coordinator was consulted as a knowledge expert and re-

source in identifying metrics for this setting. It was revealed that the NDNQI had adopted one perioperative metric.

The search for perioperative nurse-sensitive indicators yielded a potential list of metrics, which included normothermia, patient falls with harm, retained surgical items, nausea/vomiting, pressure ulcers, surgical site infections, and pain management. In narrowing down the selection of metrics, the nursing intervention(s) and the clinical impact on the patient resulting from a nurse failing to intervene appropriately were considered.

3. STRATEGY AND IMPLEMENTATION

The proposed metrics and the documentation supporting them were assimilated for discussion with clinical nurses and nursing directors in the preoperative, admission/observation/discharge, and post-anesthesia care units and operating rooms. The nurse executive responsible for this service line was also included in the discussion. This process validated the applicability of the proposed metrics for these departments. Consensus was reached on which metrics to pursue. The metrics chosen were patient falls with harm (all perioperative settings except the operating room), normothermia (all perioperative settings), and retained surgical items (operating rooms only).

The perioperative nurse-sensitive indicators identified are cutting-edge in that they have not been formally cited and defined in the literature, with the exception of patient falls with harm. Neither have data collection methodologies nor external national benchmarks been established. In accordance with the ANCC, "If a national database is not available, the organization must demonstrate that internal benchmarks are based on professional standards, literature review, or internal trended data, or all three."^[10]

3.1 Patient falls with harm

The NDNQI defines a patient fall as an unplanned descent to the floor on an NDNQI-eligible reporting unit.^[11] This includes unassisted and assisted patient falls whether they result from physiological or environmental reasons.^[11] The level of injury is stratified as minor, moderate, major, or death.^[11]

3.2 Normothermia

Several publications have addressed normothermia as an important component of a patient's perioperative care and have proposed thermal management parameters. A patient's core temperature should be highly regulated to prevent hypothermia. Paulikas^[12] defined normothermia as "core temperature ranges between 36°C to 38°C (96.8°F to 100.4°F)." Hooper et al.^[7] defined hypothermia as a core temperature below

36°C, at which point patients may experience adverse effects. Lenhardt^[13] supported this recommendation and suggested that intraoperative temperatures be maintained above 36°C unless hypothermia is specifically indicated. The Association of Surgical Technologists (AST) Education and Professional Standards Committee agreed with Paulikas's 2008 recommendation that the core body temperature range be maintained between 36°C and 38°C and that hypothermia constitutes a core body temperature below 36°C.^[14]

Paulikas^[12] emphasized the importance of preventing hypothermia through proactive nursing interventions in all phases of perioperative care and provided practice guidelines to prevent complications. The AST Education and Professional Standards Committee cited numerous complications, such as surgical site infections, increased blood loss by up to 30% and transfusions potentially up to 70%, coagulopathy, delayed drug metabolism, cardiac instability, longer recovery period, and increased cost of care.^[14] Fred et al.^[15] discussed the effect that anesthetic agents and cool temperatures in the operating room have on blood pressure and tissue perfusion. The prolonged pressure that patients are subject to in the operating room predisposes them to pressure ulcers.^[15]

3.3 Retained surgical items

Prevention of retained surgical items was found in the literature as a Never Event.^[16] The National Quality Forum defines retained surgical items as "retained and unretrieved objects that were unrecognized at the time they were left in."^[17] Because of their pro-inflammatory characteristics, retained surgical items can contribute significantly to morbidity and mortality. In two studies, 2% of 54 and 1.4% of 71 patients with RSIs died.^[18] The average medico-legal expense of retained surgical items ranges from \$37,000 to \$2,350,000 per incidence.^[18]

3.4 Implementation of the Nursing Dashboard

Armed with this potential list of metrics, we sought and obtained approval from ANCC. Key stakeholders were informed of the ANCC's decision and discussions began to establish baseline data, targets, and data collection systems for each metric. Consensus was reached regarding the methodology, data collection processes, and submission to a centralized department, which houses and generates the quarterly Nursing Dashboard. The senior outcomes analyst and NDNQI coordinator collaborated with the business intelligence and clinical informatics department to create the new online Perioperative Nursing Dashboard.

4. EVALUATION AND OUTCOMES

Evaluation was both quantitative and qualitative. For years, the perioperative nurses had been asking for readily accessible data specific to their patient population, other than process measures. They were delighted to finally have this information at their fingertips. A perioperative nurse commented, "That's awesome, now we can focus on patient outcomes that nurses directly impact and make a significant difference."

Review of the normothermia data by the nurses prompted the need to convene a Perioperative Patient Safety Committee to evaluate these patient outcomes. This committee is led by nurse clinicians representing each perioperative department. An analysis of the data posted on the Nursing Dashboard led the committee to determine that interventions were needed to achieve the desired outcome. Subsequently, the nurses adjusted their practice standards to meet or outperform the established target and then educated the staff throughout the perioperative arena.

Integration of patient falls data into a centrally posted Perioperative Nursing Dashboard enabled the nurses to track and trend patient falls and evaluate their outcomes against a national benchmark. Additionally, trended data leveraged the nurse's ability to drive performance improvement around a common set of standards.

Lastly, implementation of retained surgical items as a perioperative nurse-sensitive indicator has allowed a streamlined focus to prevent this Never Event. Classification of retained

surgical items as a nurse-sensitive indicator clearly defined a retained surgical item and the implications for nursing practice. The implementation of retained surgical items as a nurse-sensitive indicator has also been a catalyst for nurses to collectively evaluate their practice and develop patient care standards for perioperative areas hospital-wide.

5. IMPLICATIONS FOR PRACTICE

Selection of quality metrics appropriate to each clinical setting is essential in advancing care and should be based on the significance to the patient and the nurse.^[3] Magnet designation, is an international accreditation offered to all health care organizations as an indication of nursing excellence. Perioperative nurse-sensitive clinical indicators are crucial in leveraging a hospital's Magnet culture to continue to advance performance related to quality, safety, patient-centered care, and efficiency. This initiative pioneered the development of nurse-sensitive indicators in the perioperative clinical setting. When routinely measured, these indicators help to evaluate whether the structures and processes of care yield quality outcomes.^[3] Achieving the desired outcomes requires a concerted effort among clinicians who have been given access to quality data. Nurses play a central role in the care of patients. In accordance with the hospital's Professional Practice Model, the staff nurse leader oversees the coordination of patient and family-centered care and is positioned to drive these outcomes. This foundational work has established an implication for nursing practice as these quality metrics can easily be translated into perioperative settings in other health care organizations. The legwork has been done!

REFERENCES

- [1] Heslop L, Lu S. Nurse-sensitive indicators: a concept analysis. *J Adv Nurs*. 2014; 70(11): 2469-2482. <https://doi.org/10.1111/jan.12503>
- [2] Martinez KN. Establishing Ambulatory Nursing-Sensitive Indicators. Dallas (TX): American Nurses Credentialing Center; 2015.
- [3] Beckel J, Wolf G, Wilson R, et al. Identification of potential barriers to nurse-sensitive outcome demonstration. *J Nurs Adm*. 2013; 43(12): 645-652. PMID:24232238 <https://doi.org/10.1097/NNA.0000000000000006>
- [4] Wu Q, Huang L, Xing M, et al. Establishing nursing-sensitive quality indicators for the operating room: a cross-sectional Delphi survey conducted in China. *Aust Crit Care*. 2017; 30(1): 44-52. <https://doi.org/10.1016/j.aucc.2016.04.003>
- [5] American Academy of Ambulatory Care Nursing. Ambulatory Care Nurse-Sensitive Indicators State of the Industry and The Collaborative Alliance for Nursing Outcomes. Pitman (NJ): American Academy of Ambulatory Care Nursing; 2016; 2-17 p.
- [6] Standards of Perioperative Nursing [Internet]. Denver: Association of Perioperative Registered Nurses; c2010. Available from: <http://www.aorn.org/> [cited 2017 Feb 10].
- [7] Hooper D, Clifford T, Godden B, et al. ASPAN's Evidence-Based Clinical Practice Guideline for the Promotion of Perioperative Normothermia. 2nd ed. Cherry Hill (NJ): American Society of PeriAnesthesia Nurses; 2010; 346-365 p. PMID:21126665
- [8] Apfelbaum JL, Silverstein JH, Chung FF, et al. American Society of Anesthesiology Task Force. Practice guidelines for postanesthetic care: an updated report. *Anesthesiology*. 2013; 118(2): 291-307. <https://doi.org/10.1097/ALN.0b013e31827773e9>
- [9] Standards and Guidelines [Internet]. Schaumburg (IL): American Society of Anesthesiology; c2014 [cited 2017 Jul 5]. Available from: <http://www.asahq.org/quality-and-practice-management/standards-and-guidelines>
- [10] American Nurses Credentialing Center [Internet]. Silver Spring (MD): American Nurses Credentialing Center. Magnet Standard Exemplary Professional Practice "EP" 22EO, page 49. [cited 2017 Jun 8].
- [11] The National Database of Nursing Quality Indicators® (NDNQI®) [Internet]. Available from: <http://www.pressganey.com/sol>

- utions/clinical-quality/nursing-quality [cited 2017 Jun 8].
- [12] Paulikas C. Prevention of unplanned perioperative hypothermia. *AORN J.* 2008; 88(3): 358-365; quiz 365-368. PMID:18819204 <https://doi.org/10.1016/j.aorn.2008.05.020>
- [13] Lenhardt R. Monitoring and thermal management. *Best Pract Res Clin Anaesthesiol.* 2003; 17(4): 569-581. [https://doi.org/10.1016/S1521-6896\(03\)00048-X](https://doi.org/10.1016/S1521-6896(03)00048-X)
- [14] Association of Surgical Technologists. *AST Standards of Practice for Maintenance of Normothermia in the Perioperative Patient* [Internet]. Littleton (CO): Association of Surgical Technologists; c2015 [cited 2017 Jul 5]. Available from: http://www.ast.org/uploadedFiles/Main_Site/Content/About_Us/SOP_For_Normothermia.pdf
- [15] Fred C, Ford S, Wagner D, et al. Intraoperatively acquired pressure ulcers and perioperative normothermia: a look at relationships. *AORN J.* 2012; 96(3): 251-260. <https://doi.org/10.1016/j.aorn.2012.06.014>
- [16] The Joint Commission. Sentinel Event Alert Issue 51: Preventing unintended retained foreign objects [Internet]. Oak Brook (IL): The Joint Commission; c2013 [cited 2017 Jul 5]. Available from: https://www.jointcommission.org/sea_issue_51/
- [17] Wallace S. Retained surgical items: events and guidelines revisited. *The Patient Safety Authority.* 2017; 14(1): 27-35.
- [18] Freitas PS, Silveira R, Clark A, et al. Surgical count process for prevention of retained surgical items: an integrative review. *J Clin Nurs.* 2016; 25(13-14): 1835-1847. <https://doi.org/10.1111/jocn.13216>