

Neurosurgical Subspecialty Bedside Guide Improves Nursing Confidence

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Familiarity with a neurosurgical nursing guide had a positive impact on the confidence of medical-surgical nurses caring for neurosurgical patients and helped improve patient care skills.

The VA Portland Healthcare System (VAPHCS) is a 277-bed facility that serves more than 85,000 inpatient and 880,000 outpatient visits each year from veterans in Oregon and southwestern Washington. The VAPHCS consists of a main tertiary care VAMC with an acute medical and surgical facility that includes 30 beds serving qualifying veterans. Supported surgical specialties include urology, general surgery, vascular surgery, otolaryngology, orthopedic surgery, ophthalmology, cardiothoracic surgery, transplant surgery, and neurological surgery. Neurosurgical patients account for about 12% to 13% of annual surgical patients. The VAPHCS also is partnered with Oregon Health & Science University in the training of health care professionals, such as physicians and nurses.

The expectation at the VAPHCS is that medical-surgical nurses care for 4 to 5 concurrent patients, often from different surgical services. Caring for

patients with different medical and surgical needs, variable ambulatory, swallowing, and elimination functions, and different physician teams can become confusing; even within a single surgical service, postoperative care due to procedure complexity, specificity of care orders, and the real possibility of medical catastrophe can seem overwhelming. Therefore, subspecialty nursing training poses a challenge that requires technical in-service and didactic education and allocation of resources.

Despite systems level subspecialty nursing training, medical emergencies identified at the bedside can be mismanaged.¹ Errors in care can be due to an incomplete knowledge of the patient's procedure and misunderstanding of positioning and activity limitations.

To encourage medical-surgical nurses to become more engaged and confident in subspecialty patient care, the authors developed a bedside neurosurgical nursing guide to allow for independent procedure related education. The comprehensive guide summarized the clinical course for postoperative neurosurgical patients undergoing cranial and spinal surgeries. This guide included appropriate surgery-related images, procedure overviews, management decisions, potential postoperative

complications, and wound care directions. The guide was distributed to medical-surgical nurses caring for neurosurgical patients. The authors hypothesized that the guide would enable nurses to better predict adverse outcomes and respond appropriately and would improve confidence in patient care.

METHODS

For educational purposes, a bedside neurosurgical nursing guide (text and graphics) was created for the 16 surgical subspecialty nurses at the VAPHCS. The guide detailed the most common cranial and spinal neurosurgical procedures performed at VAPHCS and was written based on a typical postoperative course for each procedure by the chief neurosurgery resident at VAPHCS with collaboration from the attending neurosurgeons (Figure).

A quality improvement (QI) project was undertaken to assess nursing confidence with neurosurgical patients' care pre- and postfamiliarity with the bedside neurosurgical nursing guide. A literature search revealed no validated survey assessing nursing confidence, so one was created using the Likert scale. Specifically, an anonymous 6-question survey was completed by all 16 surgical nurses prior to familiarization with

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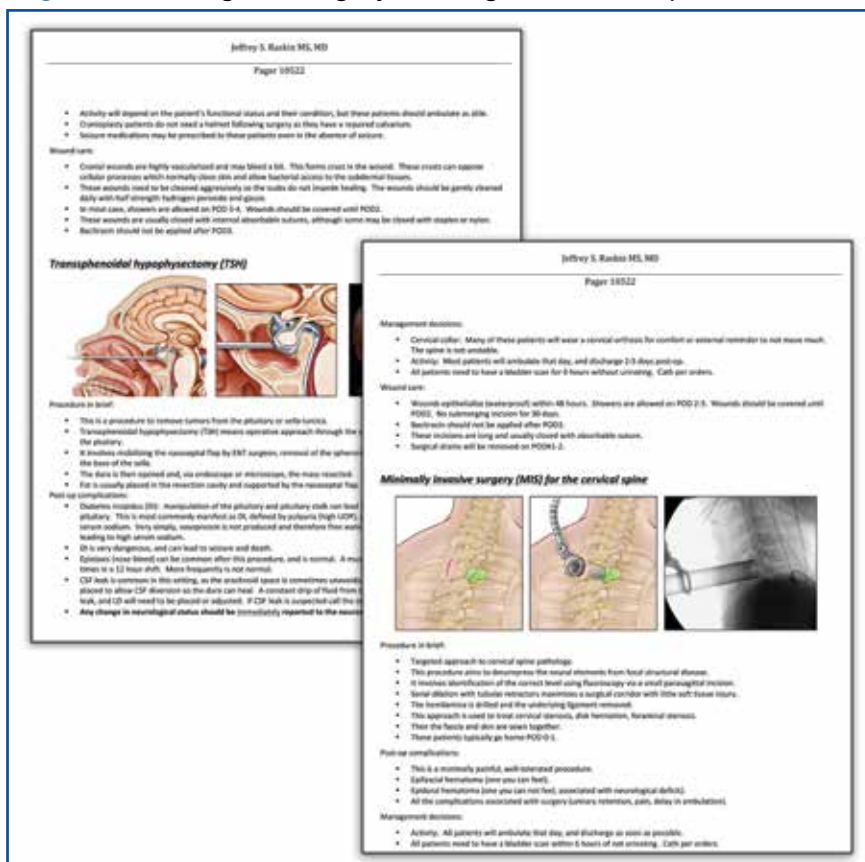
the guide. Responses were recorded as scores of 1 to 5 for questions 1, 3, and 4, with a response of 1 indicative of no comfort or confidence and a response of 5 indicative of the highest level of comfort or confidence. Responses were recorded as either true or false for questions 2 and 6, and never, occasionally, frequently, or always for question 5.

The guide was made available to nurses for 6 months without encouragement to use it. After 6 months, a 3-week period of familiarization with and education about the availability of the guide was instituted at morning nursing reports; the total availability of the guide to nursing staff was 6 months 3 weeks. After this period the same 6-question survey was distributed, and data were collected.

Survey responses were categorized into 2 groups. Responses to questions 1, 3, and 4 were categorized as group 1, and responses to questions 4 and 5 were categorized as group 2. Responses (never and occasionally) to question 5, were categorized as group 1 and responses (frequently and always) as group 2 (Table). Responses to questions 2 and 6 were grouped 1 for true and 2 for false. Nurses participating in this study ranged in age from 22 to 57 years, education level ranged from registered nurse to a bachelor of science in nursing, and years of experience ranged from < 1 year to 27 years.

Statistics were calculated using chi-square analysis with Yates correction online calculator. For the chi-square analysis, the prefamiliarization data for groups 1 and 2 were used as the expected values, and the postfamiliarization data were used for the observed values. In this manner, differences were discerned between the before and after questionnaire responses. The VAPHCS institutional review board determined that the

Figure. Neurological Surgery Nursing Guide Excerpts



study was not human research and exempt from review.

FINDINGS

Anonymous survey responses were collected from all 16 surgical subspecialty nurses both prior and after familiarization with the nursing guide. The response rate was 100% with only a few incomplete responses excluded from the analysis. Three questions in the prefamiliarization questionnaire had no appropriate response, and 1 question in the postfamiliarization survey had no appropriate response.

Improvement was statistically significant in responses for questions 1, 3, 5, and 6 ($P = .026, .008, .004,$ and $.033$, respectively). No significant differences were found for ques-

tions 2 and 4 ($P = .974$ and $.116$, respectively). It is possible that there was no significant difference in question 2 because prefamiliarization responses were already favorable. Even if nurses did not feel comfortable taking care of neurosurgical patients (as assessed in question 1), they noted confidence improvement by working on the ward and through informal assimilation of knowledge and skill, which would have accumulated naturally over 1 year.

Prior to familiarization with the guide, 7 nurses did not feel confident in assessing the need to contact a physician (question 4). After familiarization with the nursing guide, favorable responses increased from 9 to 14 nurses. Results trended

Table. Pre- and Postfamiliarization Survey Results (n = 16)^a

Question	Prefamiliarization		Postfamiliarization		Chi Square	P Value
	Group 1	Group 2	Group 1	Group 2		
1. How comfortable are you taking care of neurosurgery patients?	9	7	2	14	4.987	.026 ^b
2. Compared to this time last year, I am more comfortable taking care of neurosurgery patients.	14 ^c	1	16	0	0.001	.974
3. How confident are you in your skill caring for neurosurgery patients?	9	7	1	15	7.127	.008 ^b
4. How confident are you assessing the need to page MD for postoperative questions/concerns?	7	9	2	14	2.473	.116
5. During a shift when you care for a neurosurgery patient, how often do you use the neurosurgery nursing guide?	15 ^c	0	7 ^c	8	8.352	.004 ^b
6. I have adequate access to the neurological surgery nursing guide.	9 ^c	5	16	0	4.527	.033 ^b

^aSurvey responses were categorized into 2 groups. Responses (1, 2, and 3) to questions 1, 3 and 4 were categorized as group 1, and responses (4 and 5) were categorized as group 2. Responses (never and occasionally) to question 5, were categorized as group 1 and responses (frequently and always) as group 2.

^bStatistically significant improvement.

^cMissing an appropriate response.

toward but did not reach statistical significance, likely due to the small sample size.

Ultimately, in the 16 surgical subspecialty nurses surveyed, familiarization with the nursing guide was shown to improve comfort in taking care of neurosurgical patients and increase confidence in patient care skills. At the end of the QI project (6 months, 3 weeks), all nurses knew where to locate the bedside neurosurgical nursing guide and were familiar with it and its use. The guide remains accessible to the medical-surgical nurses and continues to be used.

DISCUSSION

Nursing confidence has an undervalued effect on patient care.² Confidence, or a belief in one’s own ability, varies directly with competence. Systematic quantification of nursing competence has been extensively studied using self-

report questionnaires and clinical simulations.^{2,3} Competency can be quantified and normalized using formal assessment; however, confidence is somewhat intangible. Nursing confidence is a situation-dependent subjective feeling of security and is derived from an internalized assessment of skills that are commensurate with patient needs. Nursing confidence is further influenced by an intuited value within the care team, adequate knowledge of the patient’s condition, and procedures and protocols.⁴

A similar but less specific definition deconstructs nursing confidence as “significance of a professional network of coworkers” and the “importance of confirmation of professional role and competence.”⁵ The professional network of coworkers is invaluable as it underlies the essence of patient-centered care. The adaptive leadership framework is integral to

the modern delivery of patient care, and via this framework frontline clinical staff, including nurses, are empowered.^{6,7}

The second portion of Haavardsholm and Näden’s definition, “importance of confirmation of professional role and competence” describes the association of the most easily augmented correlate of confidence: competency.⁵ Nursing competency is supplemented continuously with in-service training and recertification processes; however, despite this, demands placed on nurses can be technologically advanced and extremely varied. Nursing competency is known to directly correlate with increasing education, as nurses holding a master’s degree have been shown to outperform those with a bachelor of nursing degree.³

Increased formal education as well as increased work experience (> 5 years) are correlated with

increased critical thinking ability.^{4,5} The critical thinking ability of health care providers can be fortified by clinical simulation, which leads to statistically significant improvement in clinical competency.^{2,3}

A literature review of Medline and the National Library of Medicine PubMed online databases for search terms (nurs*, confidence, bedside, guide) was performed but did not result in original research assessing nurse confidence related to bedside guides. In this population, nurses were anonymously compared against their own historical data obviating any effect of education or experience on survey measures.

Nursing Self-Confidence

Evidence suggests that nursing confidence is a complex manifestation of the security felt within the care team and the comfort of one's own professional abilities.⁴ Patients' trust in the team caring for them is based on the confidence exuded by the team.⁸ In this way, nursing confidence can affect the patient-care team profoundly. Value is maximized when a nurse's self-confidence engenders patient confidence and trust. Due to the varied patient load and complexity of subspecialty nursing care, it is hypothesized that bedside manuals/guidelines can be used to educate the subspecialty nurses on specific patient-related issues.

Nursing practice competence and confidence is vital to providing care for patients with complex postsurgical health care needs. Patient safety and outcome are paramount. This can be intimidating for newly qualified surgical subspecialty nurses who have not yet had experience with or adequate exposure to patients with complex postsurgical needs. Surgical nursing continuing education places an emphasis on adaptation to

ever-changing specialized surgical procedures and postoperative patient care. Nevertheless, it is difficult for surgical subspecialty nurses to learn and retain all the possible complexities of individual cases and to confidently, appropriately, and safely care for patients especially when adverse events arise.

Recognizing that leadership is personal and not dependent on hierarchy, surgical subspecialty nurses may be better suited to specific bedside training and counseling.^{6,9} A key factor influencing nursing confidence is communication and collaboration with physicians.⁹ The role of the physician at VA medical facilities is no longer to be a commanding figure with complete medical autonomy; rather, a unified team of specialized practitioners collaboratively facilitate and deliver patient care.

There is no specific research detailing the use of bedside nursing guides in caring for postoperative patients. However, at VAPHCS, nurses created supplemental material regarding postoperative acute care of vascular surgery patients, which was found to be subjectively helpful in elevating nursing confidence. To the authors' knowledge, no such supplemental information/guide exists for other specialty surgical services.

The surgical nursing guide created here detailed visuals of many common neurosurgical procedures performed at VAPHCS and included a prioritized checklist, which the 16 surgical subspecialty nurses could reference postoperatively. The authors hypothesized that this would enhance the nurses' ability to efficiently manage specific situations while bridging communication gaps between surgical teams and nurses. The survey results agree with previous reports that suggested

that the application of an adaptive leadership framework would empower nurses to deliver excellent patient-centered care, care that can be augmented with subspecialty nursing guides.^{7,10}

Based on these results the authors propose that subspecialty surgical services consider use of a practical nursing guide for all surgical subspecialty nurses to reference, improve familiarity with procedures, and provide guidance to manage adverse events. Since implementing this reader-friendly paradigm within neurosurgical care, a nurse driven expansion has now included other subspecialty services at the VAPHCS with success.

Limitations

Survey responses have inherent bias and sampling error rates. The sample size for this survey was small. Data were grouped for data analysis. Competency and patient outcomes were not measured.

Future Directions

Despite specific surgical specialty postoperative patient care training, an overall lack of confidence can persist. A physician-created neurosurgical nursing guide that detailed the most common neurosurgical procedures, expected postoperative care, and potential emergencies was shown to improve nursing confidence. Collaborative (physician and nursing leaders) QI projects, such as described here; development of specific surgical specialty initiatives designed to improve confidence and quality; and nurse-physician communication and teamwork could lead to improved patient satisfaction and outcome.

The costs associated with developing and using bedside nursing guides are relatively low,

and efficiency can be considered high. Competency improvement could be measured by creating a specialty-specific case scenario question bank. Effects on patient satisfaction and outcome could be measured by a patient satisfaction survey. Improvements in bedside catastrophe management could be prospectively tracked; for example, rates of mismanagement of mobility status, emergent transfers to the intensive care unit, or poor wound care could be compared pre- and postfamiliarization with a subspecialty guide.

CONCLUSION

Familiarization with the VAPHCS neurosurgical nursing guide had a positive impact on the confidence of medical-surgical nurses caring for neurosurgical patients. Medical-surgical nurses were more comfortable taking care of neurosurgical patients; they felt the guide helped

improve skills and noted improved knowledge regarding involvement of physician oversight. Although objective parameters were not assessed, improvement in nursing confidence in general leads to improved overall nurse-physician communication and patient management. A further study might target objective parameters associated with guide usage, such as changes in the number of emergencies or calls to physicians regarding management. ●

Acknowledgments

The authors thank Andy Rekito, MS, for illustrative assistance.

Author disclosures

The authors report no actual or potential conflicts of interest with regard to this article.

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flect those of Federal Practitioner, Frontline Medical Communications Inc., the U.S. Government, or any of its agencies.

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