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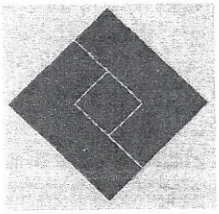

Peer-to-Peer Nursing Rounds and Hospital-Acquired Pressure Ulcer Prevalence in a Surgical Intensive Care Unit

A Quality Improvement Project

Alyson Dare Kelleher ■ Amanda Moorer ■ MaryBeth Flynn Makic

We conducted a quality improvement project in order to evaluate the effect of nurse-to-nurse bedside "rounding" as a strategy to decrease hospital-acquired pressure ulcers (HAPU) in a surgical intensive care unit. We instituted weekly peer-to-peer bedside skin rounds in a 17-bed surgical intensive care unit. Two nurses were identified as skin champions and trained by the hospital's certified WOC nurse to conduct skin rounds. The skin champion nurses conducted weekly peer-to-peer rounds that included discussions about key elements of our patients' skin status including current Braden Scale for Pressure Sore Risk score, and implementation of specific interventions related to subscale risk assessment. If a pressure ulcer was present, the current action plan was reevaluated for effectiveness. Quarterly HAPU prevalence studies were conducted from January 2008 to December 2010. Nineteen patients experienced a HAPU: 17 were located on the coccyx and 2 on the heel. Ten ulcers were classified as stage II, 3 PU were stage IV, 5 were deemed unstageable, and 1 was classified as a deep tissue injury. The frequency of preventive interventions rose during our quality improvement project. Specifically, the use of prevention surfaces increased 92%, repositioning increased 30%, nutrition interventions increased 77%, and moisture management increased 100%. Prior to focused nursing rounds, the highest HAPU prevalence rate was 27%. After implementing focused nursing rounds, HAPU rates trended down and were 0% for 3 consecutive quarters.

Introduction

The prevention of hospital-acquired pressure ulcers (HAPU) is a nursing quality outcome measure used to evaluate the effectiveness of nursing care and optimal patient outcomes.[1-3] In October 2008, the Centers for Medicare & Medicaid Services added prevention of HAPU to the National Patient Safety Initiatives.[4] Preventing HAPU remains a focus for improving the quality care in the current Healthy People 2020 objectives.[5] Despite the increased focus on prevention of HAPU, prevalence rates range from 14% to 17% and incidence rates range between 7% and 9%.[6-8] An estimated 60,000 patients die of pressure ulcer (PU)–related complications each year.[9] The average cost of PU care per patient has been estimated at $43,180 per hospital stay[5] with an annual cost of approximately $11 billion.[10] A significant body of evidence is available to guide clinical practice to reduce the prevalence and incidence of PU.[11,12]

Local Problem and Intended Improvement

Prevention of HAPU begins with a nursing assessment of PU risk using a valid risk instrument.[12,13] While there is insufficient evidence to conclude that the use of a risk assessment scales decreases PU incidence,[14] their use has been shown to aid nurses in designing and implementing an individualized prevention plan.[15] Completing a PU risk assessment is a standard of care in our surgical intensive care unit (SICU). We complete a Braden Scale score[16] on admission to the unit, and every 12 hours. We complete this assessment more frequently when a change in the patient's condition indicates that reassessment is indicated. While chart audits demonstrated that the standard of care was being completed, it was not known if SICU nurses were linking these assessments to an individualized plan of care to prevent HAPU. This concern was prompted by a rising HAPU rate in our SICU. Therefore, a quality improvement

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project was initiated by 2 bedside nurses (skin champions—A.K. and A.M.) in coordination with the hospital's certified WOC nurse, the unit clinical nurse specialist (CNS), and the unit nurse manager. The primary goal of this quality improvement project was to decrease the HAPU prevalence in the SICU through peer-to peer bedside nursing rounds under the clinical leadership of unit-based skin care champions. A secondary goal was to increase the use of preventive interventions.

Nursing rounds were used as a primary intervention because evidence suggests that they provide an opportunity for nurses to increase their understanding of interventions and reasoning for care decisions.[17] Clinical rounds have been described in various settings and are generally used to improve the use of evidence in practice providing a forum to model expertise and develop clinical decision-making skills.[18] In this quality improvement study, we combined the expertise of the certified WOC nurse, CNS, and skin care champions to implement nursing rounds to improve PU prevention knowledge and prevention interventions.

Practice Setting

This quality improvement project was conducted in a 17-bed SICU that is part of a 413-bed quaternary referral academic medical center in Colorado. The SICU provides care to a variety of critically ill patients including trauma, cardiothoracic surgery, general surgery, and transplant surgery/bridge-to-transplant patient populations. Patients in the SICU are typically high-acuity individuals characterized by long operative times, sustained periods of hemodynamic instability, aggressive fluid mobilization, excessive moisture from drains, third spacing of fluid, and fecal incontinence. Each of these factors is known to contribute to an increased risk of pressure ulceration.[12,19]

Intervention Planning and Study

The hospital has a skin champion team consisting of certified WOC nurses, a nurse researcher, clinical dietician, and bedside nurses. The purpose of the skin champions is to continually review current best practice for optimal skin care to include prevention of HAPU. The team develops evidence-based clinical decision tools to guide nursing practice relative to skin care, wound care, and PU prevention and management. The SICU has 2 bedside nurses as representatives on this team. The SICU unit skin champion RNs began to embrace their role with the initiation of the Skin Prevention Assessment Management hospital-wide campaign that was launched in September 2008. A teaching tool in the form of a pocket guideline was distributed to each bedside nurse. The tool included information on body anatomical pressure points, our PU prevention protocol and intervention algorithm, PU staging, measuring, and documentation, along with a Braden Scale risk assessment scorecard with treatment guidelines. The unit skin champion RNs were responsible for ensuring staff education about the Skin Prevention Assessment Management program for HAPU prevention.

Despite these educational efforts, HAPU prevalence in our SICU remained a concern. The SICU skin champions hypothesized that hospital-wide training might not have resulted in meaningful practice changes within the SICU practice environment. Thus, a focused, extensive case study was developed to enhance teaching on skin assessment, prevention, and documentation in this critical care unit. The case study was reviewed through informal peer-to-peer teaching, presentations at staff meetings, and a detailed poster display. In spite of these efforts, the PU prevalence rate continued to be above benchmark prevalence rates published by the National Database of Nursing Quality Indicators (NDNQI) for SICU in academic hospitals.

In an effort to improve patient outcomes and reduce the unit HAPU prevalence rates, the 2 unit skin champion RNs met with the certified WOC nurse, unit manager, and unit CNS to develop a more effective method to engage staff in aggressive PU prevention. The root of the problem was identified as a lack of application of the subscales of the Braden Scale for subscale-specific interventions. Lynn and colleagues[20] suggested that bedside rounds provide systematic, data-guided activities designed to bring about immediate improvements in health care delivery. The SICU team decided to implement PU bedside rounds as a focused intervention to bring about rapid improvement in the nurses' knowledge of PU risk assessment. Rounds were also created to bridge assessment of PU risk via the Braden Scale and application of daily nursing care.

In quarter 6, the certified WOC nurse, unit manager, unit CNS, and unit skin champion RNs began weekly PU bedside rounds. The idea was not to examine the patients, but to engage the unit RNs in a discussion of their patients' PU risk factors. Rather than asking the RN to state the Braden Scale (eg, number), nurses were asked to apply their knowledge of the Braden Scale subscales to preventive interventions driven from the specific subscale risk assessment. For example, if the RN stated that the patient was consistently moist from incontinence, the intervention would be to use the moisture wicking underpads, regular application of a skin protectant, and exploration of the cause of excessive moisture.

We used a specific question format to guide discussions with RN colleagues (Table 1). In addition to this set group of questions, patient specific risks such as compromised hemodynamics or specific orders were discussed. For example, if the physician ordered strictly limited patient mobility, the bedside RN was encouraged to discuss the rationale of the order, methods to relieve pressure points without full position changes, and the ongoing need for this restriction when the patient's medical condition improved. The RN was also encouraged to investigate the need for an alternative support surface such as a low air loss or immersion surface, a nursing-driven decision in our hospital.

At times, the certified WOC nurse, the unit manager, and the unit CNS were not able to be present for PU bedside

TABLE 2.

Summary of Prevalence Study Data by Quarter

Quarter	N	Age, Mean (SD); Range	Braden Scale Score, Mean (SD); Range	No. of Patients With HAPU (Prevalence Rate)
2008 Q1	17	58.5 (±14.2); 27-29	15 (±2.7); 12-20	0
2008 Q2	13	56.4 (±13.9); 27-78	16 (± 2.4); 12-19	1 (7.7%)
2008 Q3	12	59.1 (±16); 29-80	15 (±2.8); 12-21	2 (16.7%)
2008 Q4	13	56.5 (±17.4); 23-77	16 (±2.6); 12-20	2 (15.4%)
2009 Q5	15	60.3 (±12.4); 27-80	16 (±2.3); 13-22	4 (26.7%)
2009 Q6	14	53.5 (±17.5); 22-75	14 (±2.3); 10-17	2 (14.3.%)
2009 Q7	15	58.7 (±11.1); 39-79	16 (±2.7); 12-22	1 (6.7%)
2009 Q8	16	59.9 (±14.22); 22-70	15 (±3); 9-21	4 (27.1%)
2010 Q9	16	60.7 (±11.1); 45-89	17 (±2.6); 12-22	0
2010 Q10	16	59.4 (±17.1); 24-84	16 (±3.9); 9-23	0
2010 Q11	17	58.5 (±12.7); 36-87	16 (±2.1); 12-20	0
2010 Q12	16	60 (±14.3); 30-82	17 (±2); 13-19	1 (6.3%)

peer-to-peer bedside rounds. We also tracked the frequency that preventive interventions were implemented (Table 3).

TABLE 3.

Prevention Interventions Documented and Verified by Direct Observation

Quarter	Prevention Surface, %	Repositioning, %	Nutrition Addressed, %	Moisture Management, %
2008 Q1	53	100	47	36
2008 Q2	27	100	23	30
2008 Q3	8	75	33	17
2008 Q4	38.5	69.2	46.2	0
2009 Q5	73.3	80	53.3	53.3
2009 Q6	78.6	100	78.6	21.4
2009 Q7	40	100	53.3	46.7
2009 Q8	68	100	88	88
2010 Q9	100	100	100	100
2010 Q10	100	100	100	100
2010 Q11	100	100	100	100
2010 Q12	100	100	100	100

Discussion

We believe that the outcomes we tracked suggest that peer-to-peer bedside rounds by the unit skin champions have the potential to diminish HAPU prevalence rates in a SICU such as ours. These rounds were developed to encourage clinical discussion of specific skin care management interventions. We hypothesize that the process of refocusing the bedside RN's assessment to look more closely at the subscales of the Braden Scale and using direct care interventions led to greater utilization of preventive interventions and, ultimately, fewer HAPUs.

While PU prevalence rates tended to be lower after initiating peer-to-peer bedside rounds, the unit experienced 2 spikes in prevalence data. In Q8, the HAPU prevalence was 27%, representing 4 ulcers. The majority of our patients were deemed to be at moderate to high risk for developing a PU, with Braden Scale scores ranging from 10 to 14. We also found an unusually high patient acuity during that period. The critically ill patient is at increased risk of PU because of the patient's severity of illness as well as variables of immobility, hemodynamic instability, excessive moisture, advanced age, and suboptimal nutrition.[12,19,22-24] Recently the National Pressure Ulcer Advisory Panel released a statement that not all PUs are avoidable.[12] The panel of experts agreed that certain situations create conditions such as hemodynamic instability seen in patients in critical care units, may influence turning or reposition, and lead to unavoidable PUs.[12] This statement, however, does not mean that PU assessment risk and prevention strategies should be minimized. Rather, the critically ill patient is at greatest risk of PU; thus, critical care nurses need to be vitally involved in the prevention of PU through ongoing skin and PU risk assessment and initiating interventions to minimize patients' risk for developing a HAPU.

In Q12, the prevalence rate was also high at 6%, representing 1 HAPU. This wound was an unstageable PU located on the coccyx. Preventive interventions in this patient included a low air loss bed, fecal containment device, and enteral feeding. Nevertheless, repositioning remained a challenge because of prolonged hemodynamic instability and we believe that this may have contributed to the development of an HAPU.

We found that peer-to-peer discussions during bedside rounds were perceived to be more effective and meaningful to critical care nurses than were typical educational strategies of online education modules and classroom staff in-service education. Throughout this quality improvement project, adjustments in peer-to-peer rounds were made to address new initiatives launched by the evidence-based practice skin team and to specifically address nursing interventions for prevention of PU in the SICU. While the direct

impact of rounds and improved nursing knowledge was not measured in this project, we believe that peer-to-peer rounds improved RN ownership of PU-prevention strategies.

The introduction of clinical nursing rounds has been found to be an innovative strategy that supports an environment of mutual learning that shares the expertise of senior nurses,[17] in this case, peer SICU nurses (eg, unit-based skin champions). Nursing rounds provide a forum to facilitate collaborative problem identification, clinical decision making, and incorporation of evidence at the point of care to promote individualized patient-centered evidence-based nursing practice.[18] Pressure ulcer rounds by peers allowed sharing of clinical information and PU-prevention education that was seen as immediately meaningful to critical nurse peers.

We acknowledge that other factors during the 36 months of data collection might have influenced the prevalence of HAPU. For example, new intensive care unit beds and mattress surfaces were purchased during the data collection period. In addition, we introduced a wicking incontinence underpad product. The results of this project are also limited by the use of quarterly prevalence rates as opposed to incidence rates. NDNQI prevalence studies provide data only 4 times a year. However, data collection was scheduled in a consistent manner in an effort to standardize the process.

Conclusion

We applied peer-to-peer bedside skin rounds in order to improve the HAPU prevalence rates in our SICU and increase the implementation of preventive interventions. Two unit-based skin care champions were able to engage in dialogue with critical care nurse colleagues in the context of individual patients. Pressure ulcer bedside rounds provided an opportunity to explore the RN's knowledge of Braden Scale score subscales through discussion of the patient assessment and how the nurse determined the patient's risk for skin breakdown. Despite the high risk for skin breakdown in this patient population, the SICU has continued to have a decreased prevalence rate. Further research is needed to demonstrate the efficacy of nursing rounds as an intervention to improve RN knowledge of PU risk and patient outcomes.

KEY POINTS

✔ Peer-to-peer nurse rounds were associated with an increased use of preventive interventions and a decline in the quarterly prevalence of HAPU in our SICU.

✔ Our experiences suggest that peer-to-peer rounds are especially useful in the critical care unit because they are perceived as providing more immediate and clinically relevant knowledge about current patients than traditional in-service staff education.

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References

1. American Nurses Association. Nursing-sensitive quality indicators for acute care settings and ANA's safety & quality initiatives. http://nursingworld.org/readroom/fssafety.htm. Published 2004. Accessed January 3, 2011.
2. National Database of Nursing Quality Indicators. Frequently asked questions. http://www.nursingquality.org/FAQPage.aspx. Published 2006. Accessed May 10, 2005.
3. Needleman J, Buerhaus P. Nurse staffing levels and the quality of care in hospitals. *N Engl J Med*. 2002;346(22):1715-1722.
4. Centers for Medicare & Medicaid Services. Centers for Medicaid and State Operations SMDL #08-004 July 31, 2008. https://www.coms.gov/SMDL/downloads/SMDO73108.pdf. Accessed April 26, 2011.
5. US Department of Health and Human Services. Developing Healthy People 2020. http://www.healthypeople.gov/hp2020/Objectives/ViewObjective.aspx?Id=407&TopicArea=Older±Adults&Objective=OA±HP2020%e2%80%935&TopicAreaId=37. Accessed April 26, 2011.
6. Armstrong DG, Ayello EA, Capitulo KL, et al. New opportunities to improve pressure ulcer prevention and treatment: implications of the CMS inpatient hospital present on admission indicators/hospital-acquired conditions policy: a consensus paper from the international Wound Care Advisory Panel. *Adv Skin Wound Care*. 2008;21(10):469-478.
7. Duncan KD. Preventing pressure ulcers: the goal is zero. *Jt Comm Qual Patient Saf*. 2007;33(10):605-610.
8. Comfort EH. Reducing pressure ulcer incidence through Braden Scale risk assessment and support surface use. *Adv Skin Wound Care*. 2008;21(7):330-334.
9. Reddy M, Gill SS, Rochon PA, et al. Preventing pressure ulcers: a systematic review. *JAMA*. 2006;296:974-984.
10. Ayello EA, Lyder CH. A new era of pressure ulcer accountability in acute care. *Adv Skin Wound Care*. 2008;21(3):134-140.
11. Institute for Healthcare Improvement. Pressure Ulcer Prevention. http://www.ihi.org. Accessed April 24, 2011. Accessed April 24, 2011.
12. National Pressure Ulcer Advisory Panel. Not all pressure ulcers are avoidable. http://www.npuap.org/A_UA%20Press%20Release.pdf. Accessed September 21, 2011
13. European Pressure Ulcer Advisory Panel and National Pressure Ulcer Advisory Panel. *Prevention and Treatment of Pressure Ulcers: Quick Reference Guide*. Washington, DC: National Pressure Ulcer Advisory Panel; 2009.
14. Pancorbo-Hidalgo PL, Garcia-Fernandez FP, Lopez-Medina IM, et al. Risk assessment scales for pressure ulcer prevention: a systemic review. *J Adv Nurs*. 2006;54(1):94-110.
15. Magnan MA, Maklebust J. The nursing process and pressure ulcer prevention: making the connection. *Adv Skin Wound Care*. 2009;22(2):83-91.
16. Braden BI, Bergestrom N. Clinical utility of the Braden Scale for Predicting Pressure Sore Risk. *Decubitus*. 1989;2:44-51.
17. Jarman HJ. Sharing expertise—using clinical nursing rounds to improve UK emergency nursing practice. *Australas Emerg Nurs J*. 2009;12:73-77.

18. Aitken LM, Burmeister E, Clayton S, et al. The impact of nursing rounds on the practice environment and nurse satisfaction in intensive care: pre-test post-test comparative study. *Int J Nurs Stud*. 2011;48:918-925.
19. Junkin J, Selekof JL. Prevalence of incontinence and associated skin injury in the acute care inpatient. *J Wound Ostomy Continence Nurs*. 2007;34(3):260-267.
20. Lynn J, Baily M, Bottrell M, et al. The ethics of using quality improvement methods in health care. *Ann Intern Med*. 2007;146: 666-673.
21. National Pressure Ulcer Advisory Panel. Pressure ulcer stages revised by NPUAP. http://www.npuap.org/pr2.htm. Accessed September 21, 2011.
22. Kottner J, Balzer K, Dassen T, et al. Pressure ulcers: a critical review of definitions and classifications. *Ostomy Wound Manag*. 2009;22(9):22-29.
23. Mao C, Rivet A, Sidora T, et al. Update on pressure ulcer management and deep tissue injury. *Ann Pharmacother*. 2010;44:325-332.
24. Thomas DR. Clinical practice in long-term care: prevention and treatment of pressure ulcers. *J Am Med Dir Assoc*. 2006;7(1):46-59.