NCPS
Nebraska Coalition for Patient Safety

NCPS Reporting Committee Summary
Quarter 4 – 2024

Could this happen in your organization?

Patient Safety Event – Delay in Treatment of Pressure Injury and Surgical Wound

Event #1 - A 77-year-old woman with ESRD and recently initiated on hemodialysis was admitted to ICU from SNF due to hypotension during dialysis. She had multiple chronic conditions (chronic systolic heart failure, anemia of chronic kidney disease, atrial fibrillation on oral anticoagulation with Eliquis, insulin-dependent diabetes mellitus type 2, chronic hypotension on midodrine, coccygeal osteomyelitis noted on recent MRI, recent enterococcal bacteremia, recent GI bleed, recurrent right pleural effusion status post pleurx catheter placement). A sacral ulcer, which had been present for about a year and had been followed/known by a Wound Specialist MD, was noted during her admission assessment.

At admission, palliative care was discussed with the patient and the hospitalist placed an order for a Wound RN to see the patient. At the wound specialist's initial consult, a recommendation for daily Therabond, offloading with air fluidized bed, and optimal nutrition was made. No orders were entered and this omission not noticed for five days. At that point in time, a CT guided bone biopsy of the coccyx to evaluate for osteomyelitis was performed. The results of this procedure and concerns for the patient's status were communicated with the patient's bedside RN, the charge RN, and the Hospitalist. A recommendation was made to consult with the wound specialist for further management and wound care order clarification. At that time, the Hospitalist requested recommendations from the wound care specialist for wound care for the next few days which were a weekend. The wound care specialist recommended venelex QID to sacrococcygeal pressure injury, envella bed, and a nutrition consult. The Hospitalist placed the orders for these items.

Two days later the wound was stage 4 with exposed bone at coccyx and maroon discoloration to sacrum.

Event #2 – A 72-year-old male previously involved in a motor vehicle accident which resulted in bilateral ankle fractures, and now experiencing a non-healing left foot ulcer, was transferred from an outside hospital. He had multiple co-morbidities including type 1 diabetes, diabetic retinopathy, polysubstance abuse, former smoker, CAD with CABG, PAD, hypertension, and hyperlipidemia. He reported severe pain in his left leg shooting from his left ankle. For the next 6 days, wound cares for his right heel and fifth metatarsal head ulcer and the left ankle ulcer were performed. An ortho consult 4 days post admission noted that the left ankle wound has dehisced, and that hardware was now exposed. On day 6, it was decided to take the patient to the OR for an incision and drainage of the left leg ulcer and debridement of two heel ulcers.

A wound vac was placed post-procedure and the patient was moved to an inpatient general care area post-surgery. Wound vac orders were not placed by the surgeon nor requested by nursing. Six days after the surgery, a float pool RN noticed the error and contacted the wound care nurse. The wound care nurse changed the dressing and contacted the orthopedic surgeon regarding wound vac orders. Orders for the wound vac to be changed Monday, Wednesday, and Friday were placed. Six days later, a float pool nurse found that the vac had not been changed as ordered by the orthopedic surgeon. Additionally, it was questionable if the wound dressings had been performed correctly because hydrafera blue was not found under the mepilex nor was Santyl found in the room. The patient now had an unstageable left posterior heel wound that probed to bone.

Contributing factors:

- Communication, at other than the time of handover/handoff
- Handover/Handoff
- Human factors
- Policies and procedures, including clinical protocols
- Staff qualifications
- Health information technology (HIT)

Event #1 Possible Causal Statements

- The lack of consistent documentation of the wound size, may have resulted in complacency about the progress of the wound which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of accounting for the present-on-admission Stage 3 ulcer within the Braden Scale may have resulted in underestimating the risk of ulcers as moderate which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of a mechanism to assess compliance with recommended actions associated with the Braden Scale may have resulted in inconsistent compliance which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of specific recommendations to avoid supine by using partial side lying and to use longitudinal pillows to float heels may have resulted in patient being positioned in supine which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of specific recommendations for mobility and physical/occupational therapy may have resulted in increased impairment in bed mobility which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of consistent focus on positioning to avoid supine may have resulted in patient not being repositioned from side to side every two hours which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of a timely, coordinated, team approach to developing a comprehensive plan of care (i.e. through interdisciplinary rounds) to manage the patient's pre-existing pressure ulcers on coccyx and heels resulted in multiple recommendations from multiple providers over days which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of direct communication between Wound Specialist MD and Hospitalist resulted in lack of coordination and follow-up to establish a timely, coordinated, comprehensive plan of care which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.
- The lack of entering orders by the Hospitalist after reviewing the Wound Specialist's recommendations resulted in a delayed and uncoordinated plan of care which increased the likelihood that a stage 3 sacrococcygeal ulcer would progress to stage 4.

Event #2 Possible Causal Statements

- The lack of written wound vac orders by the orthopedic surgeon resulted in the delay in care of the patient's heel wound which increased the likelihood of the development of an unstageable heel wound.
- The failure of nursing staff to follow the 24-hour Chart Check – Inpatient Units Work Instructions resulted in the lack of recognition of needed wound care orders which increased the likelihood of delay in treatment and the development of an unstageable heel wound.
- The lack of nurse-to-nurse handoff/communication between the WOC RN and RN bedside resulted in delay of proper care of the patient's wounds which increased the likelihood of the development of an unstageable heel wound.
- The lack of a clear understanding regarding wound care accountability between the consulting specialty providers and the WOC RN resulted in neither provider addressing the patient's wound care which increased the likelihood of a delay in treatment and the development of an unstageable heel wound.

Interprofessional Practice

- Evidence demonstrates that when interprofessional healthcare teams practice collaboratively it can enhance the delivery of person-centered care and lead to improved patient and health systems outcomes.[1]
- Six core-competencies of interprofessional team collaboration have been identified: Communication; Interprofessional conflict resolution; Shared decision-making; Reflection; Role clarification; Interprofessional values and ethics.[1]
- Within the **Communication** competency, the following associated behaviors are listed[1]:
    - Develops processes for exchanging information in a specific and timely manner – within and across teams.
    - Explicitly considers which members need to be involved in giving and receiving which pieces of information.
    - Communicates using language that is common among roles and professions by avoiding jargon and acronyms, providing explanations and checking for understanding.
- Within the **Shared Decision-making** competency, the following associated behaviors are listed[1]:

- Creates and implements interprofessional care plans which reflect what is most important to patients and families/customers
- Decides collaboratively on learning goals that are shared across roles and professions
- Identifies and designates accountability for all aspects the work particularly where there is role overlap

- Within the **Role Clarification** competency, the following associated behaviors are listed[1]:
  - Members are able to articulate their role and/or scope of practice to others on their team
  - Members actively seek understanding of the roles of others on their team
  - Members recognize their limitations and consult with one another appropriately based on knowledge, skills, roles and scopes
- Multidisciplinary rounds (MDR) are a patient-centered care model where professionals from different disciplines collaborate in real time to provide specialized expertise which improves patient care.[2]
- MDRs have been found to[2]:
  - decrease patient mortality, complications, length of stay (LOS), and readmissions
  - improve levels of patient satisfaction
  - result in higher utilization of ancillary services such as physical therapy and nutritional services
  - decrease near-miss events
  - improve relationships between families' and caregivers' participation which frequently offers valuable insights that shape the patient's care plan; shifts the relationship from adversarial to collaborative which facilitates smoother navigation through challenging conversation.

Pressure Injuries

- Prevention of pressure injuries is the most important step in these difficult-to-treat wounds and includes[3]:
  - Risk Assessment
  - Skin Care
  - Nutrition
  - Repositioning and Mobilization
  - Education for individual and family regarding pressure injuries

Optimal Treatment of Pressure Injuries-factors to consider (including prevention strategies)[4]

Factors to consider	Tips and notes
Engage the patient, family, and carer in treatment	▪ Provide education through brochures, face-to-face interactions, skills training and psychosocial support ▪ Listen to concerns and provide solutions to care practices within the environment
Manage pain	▪ Use a validated pain assessment tool relative to the person and context ▪ Consider using non-pharmacological and pharmacological management strategies ▪ Administer regular analgesia ▪ Reassess pain levels following interventions ▪ Consider the use of topical agents for pain relief
Optimize nutrition/ hydration	▪ Screen for nutritional risk using a validated tool ▪ Refer to a dietitian for comprehensive assessment ▪ Follow the international guideline recommendations for calorie (30-35 kcal/kg) and protein (1.2-1.5 g/kg) intake based on body weight
Mobilize and reposition the body	▪ Offload bony prominences and pressure injury sites ▪ Encourage early mobilisation when appropriate ▪ Implement individualised repositioning and mobilisation strategies ▪ Promote early/ongoing mobilisation and micro turns/incremental turns when appropriate ▪ Use manual handling supportive devices such as slide sheets

	▪ Consider the surface and the position of the bed e.g. no longer than 30 minutes seated mobilisation ▪ Reposition as frequently as required for the individual's needs
Promote skin health	▪ Assess skin on screening (on arrival) and tissue with every risk assessment ▪ Implement a skin hygiene care plan that includes cleaning and hydrating the skin, especially after incontinence episodes ▪ Avoid using alkaline soaps and cleansers ▪ Protect the skin from moisture with a barrier product ▪ Consider wearing clothing with low coefficient of friction to reduce friction and shear
Manage incontinence	▪ Assess moisture-associated skin damage related to incontinence ▪ Implement incontinence management strategies including individualised toileting and/or regular incontinence pad changes ▪ Consider using high absorbency incontinence products ▪ Incorporate pH skin cleansing and barrier cream products
Minimize risk from devices	▪ Select appropriate devices that are best fit for purpose ▪ Ensure that devices are correctly fitted ▪ Regularly monitor device securement and skin changes under device ▪ Observe to prevent skin damage related to devices
Optimize pressure redistribution	▪ Consider using high specification foam pressure redistributing e.g. support surfaces, active pressure support surfaces or specialty support surfaces ▪ When appropriate, use prophylactic multilayer silicone dressings and consider context (write the date of application of the dressing and write a "P" for prophylaxis dressing if it is for prevention or "T" for treatment if used for wound management) and ensure daily checks under dressing

Negative pressure wound therapy (NPWT)[5] Using the Vacuum Assisted Closure System (VAC)

- NPWT is the continuous or intermittent application of sub-atmospheric pressure to the wound bed, which has been shown to improve the wound environment, kick-starting healing and help reduce the time to closure of the wound; this can be particularly beneficial in hard-to-heal wounds at risk of complications and extended healing time.
- NPWT is a useful treatment in a variety of acute and chronic wounds and has a number of clinical effects that promote healing responses, making it a well-established method of treating a variety of wound types.
- Reported benefits include:
    - reduction in wound size
    - increased blood flow to the wound
    - removal of excess fluid and reduced tissue edema
    - stimulation of granulation tissues, resulting in progressive wound closure
    - increased cell proliferation
    - protection from outside contaminants and decrease in bacterial bioburden
    - maintenance of moist wound healing environment
    - reduced wound bed trauma
- NPWT is primarily used on chronic wounds that have stalled and/or hard-to-heal wounds that have not responded to standard treatment. It can be considered on any wound that:
    - is failing to progress toward healing in the expected time frame using standard care
    - produces volume/viscosity of exudate that is difficult to manage
    - requires reduction in size to achieve surgical (primary) closure or healing by secondary intention

Postoperative Wound Dehiscence

- Postoperative wound dehiscence occurs in up to 3% or abdominal surgeries, and is associated with significant risk of mortality between 14% and 50% as well as prolonged length of stay, subsequent surgeries, and incisional herniation.[6]
- Proper identification of patients at risk, prevention of surgical site infections, and appropriate postsurgical wound assessment help decrease the incidence of postoperative wound dehiscence. Though many risk factors are

nonmodifiable, there are factors that can be addressed by hospitals (e.g., nutritional status, decreasing surgical error)[6]

- In addition to patient harm, postoperative wound dehiscence significantly increases the cost of patient care.[7]

Main general risk factors for SWD (WUWHS, 2018)[7]

Category of risk factor	Patient-related modifiable risk factors	Pre-operative risk factors	Intra-operative risk factors	Post-operative risk factors
Major	• BMI ≥ 35.0kg/m^2 • Diabetes mellitus • Current or recent smoking	• Emergency surgery • Age ≥65 years	• Extended duration of surgery • Inadequate surgical closure • Peri-operative hypothermia*	• Wound infection (SSI)
Moderate	• COPD‡ • Malnutrition: hypoalbuminemia (serum albumin <3.0g/dl) • Anaemia • BMI 30.0-35.0kg/m2 • Alcohol abuse	• Male gender • ASA Physical Status ≥2 • Previous dehiscence/wound healing problems • Immunosuppression • Long-term steroid use • Malignant disease • Chemotherapy • Radiotherapy • Uraemia • Peripheral vascular disease • Suboptimal timing or omission of prophylactic antibiotics*	• Blood transfusion • High wound tension closure • Tissue trauma/large area of dissection and/or undermining	• Failure to wean from ventilator • One or more complication other than dehiscence • Premature suture removal
Minor	• BMI 25.0-29.9kg/m2	• Extended pre-operative hospitalization or residency in a nursing home*	• Failure to obliterate dead space	• Trauma across incision
Rare		• Alpha-1 antitrypsin deficiency • Ehler-Danlos syndrome • Behcet's disease • Bleeding disorders*		

‡ May be a risk factor in different types of surgery for different reasons, e.g. because of coughing in abdominal surgery and sternotomy and because of the adverse effects of chronic disease on wound healing in all types of surgery

* These risk factors for SSI or other surgical wound complications, e.g. haematoma and seroma, that may be associated with SWD. Other factors listed in the table have been reported to be associated with SWD specifically ASA: Arican Society of Anesthesiologists; BMI: body mass index; COPD: chronic obstructive pulmonary disease; SSI: surgical site infection

Delay in Treatment of Pressure Injury and Surgical Wound	Yes	No	What action is needed?
How are interdisciplinary rounds on a general patient care floor structured? Is there collaboration between the various services lines caring for patients? Are the patient's current plan of care and goals thoroughly reviewed during interdisciplinary rounds? ***See*** *A framework for interprofessional team collaboration in a hospital setting: Advancing team competencies and behaviours*[1] and *Synergistic strategies: Optimizing outcomes through a multidisciplinary approach to clinical rounds*[2]			
Is there a process to ensure timely review of orders and consults for all patients?			
Are there adequate handoff tools in place for nurse-to-nurse, provider-to-nurse, and provider-to-provider communication? ***See*** *TeamSTEPPS 2.0 Pocket Guide*[8]			
Are your organization's guidelines for prevention of pressure injuries the current best practices? Do they include a standardized pressure injury prevention protocol? ***See*** *The Standardized Pressure Injury Prevention Protocol (S-PIPP) Infographic*[10], and Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline The International Guideline 2019[11]			
Do you have policies and procedures that provide guidance to nursing staff regarding the importance of, and how to accomplish, offloading of a patient's pressure points? Best care for the skin care of incontinent patients? ***See*** *Incontinence-Associated Dermatitis Intervention Tool (IADIT)*[9], *Standardized Pressure Injury Prevention Protocol Checklist (S-PIPP)*[12], PIP Tips for Prone Positioning[13], *Joint Commission Quick Safety 25: Preventing pressure injuries*[14] , *Pressure Injuries: Prevention, Evaluation, and Management*[15]			
Have you provided the resources your staff requires so that they may correctly stage pressure injuries for both lightly and darkly pigmented skin? See *NPIAP Staging for Lightly and Darkly Pigmented Skin*[16]			
Are there policies and procedures which outline how nursing staff can assess the potential need for a specialty bed? How to acquire a specialty bed when needed?			
Is nursing competency for the topic of prevention of pressure injuries validated? For the topic of the use of wound vacs and daily wound care?			
Are your organization's guidelines for the use of wound vacs aligned with current best practices? ***See***: *The Role of Mechanically Powered Disposable Negative Pressure Wound Therapy (dNPWT) in practice*[5]			
Do you have clinical guidelines, care paths, or protocols to reduce the occurrence of post operative wound dehiscence that align with current best practices? ***See*** *Surgical Wound Dehiscence (SWD) International Consensus Statement on Assessment, Diagnosis and Management*[6]			
Is a pre-operative dehiscence risk factor assessment completed on surgical patients? Are patients educated regarding the risk factors if they are non-compliant with post-operative instructions? ***See*** *Surgical Wound Dehiscence (SWD) International Consensus Statement on Assessment, Diagnosis and Management*[6]			
Are daily wound assessments a part of your nursing protocol? ***See*** *Surgical Wound Dehiscence (SWD) International Consensus Statement on Assessment, Diagnosis and Management*[6]			
Does your organization have effective disclosure policies that are used appropriately so that patients and their families are informed of unanticipated events and outcomes? *See AHRQ's CANDOR toolkit*[17]			

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Additional Resources

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