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Points criteria:

Criteria	Under performance <3 points per criteria	Basic 3 – 3.9 points per criteria	Proficient 4.0 – 4.4 points per criteria	Distinguished 4.5 – 5 points per criteria
Required content objectives	Content objectives are missing or sparsely covered.	Content objectives are not consistently addressed. Demonstrates minimal understanding of content.	Content objectives consistently addressed. Demonstrates understanding of content.	Content objectives consistently addressed. Demonstrates mastery of content.
Academic writing standards	Writing lacks scholarly tone & focus. Sparse content. Multiple grammatical, spelling, & factual errors. Reliance on bullet points rather than effective writing in speaker notes. 4 or more direct quotes per project.	Writing is unclear and/or disorganized. Inconsistent scholarly tone. Inadequate depth of content. Grammatical and spelling errors. No more than 3 direct quote of less than 40 words per project.	Writing demonstrates general exploration of content. Responses are clearly written using scholarly tone. Few grammatical and/or spelling errors. No more than 2 direct quote of less than 40 words per project.	Writing demonstrates comprehensive exploration of content. Responses are clearly written using scholarly tone. Rare grammatical and/or spelling errors. No more than 1 direct quote of less than 40 words per project.
APA formatting	References and citations have multiple errors or are missing.	References and citations have errors.	References and citations have few errors.	References and citations have rare errors.

Carefully review the above rubric on how points are awarded. Select one (not both) of the case studies listed on page three. Then, using academic writing standards and APA formatting of references and citations, respond to each of the learning objectives listed on page two. Each response should be 150-350 words in length, and should be entered below each objective on this document. Save the completed document as the assignment title with your name and submit to the dropbox.

1. Define root cause analysis & its role in pressure injury prevention.

Root cause analysis (RCA) is a structured process used to determine the original cause and contributing factors that led to an adverse health outcome, including sentinel events. (Black, 2019) The goal is to find the basic reason that performance didn't live up to expectation in a health care setting in order to identify appropriate measures to prevent future occurrences of the same kind. RCA is required by the Joint Commission to determine the cause of sentinel events in hospitals, following the use of this process in industries such as aviation and nuclear plants. Black (2019) identifies three levels of investigation: identifying the symptoms of the problem, its human factors, and "latent" roots in the systems and processes of the facility. This work is critical for health care professionals and companies to help improve their quality ratings, on which Medicare reimbursement rates depend. Centers for Medicare & Medicaid Services (CMS) penalizes institutions for the Hospital-Acquired Injuries (HAI) such as pressure ulcers. Ideally, these investigations are timely (within 72 hours) and involve team members who were not directly involved in the event. When the event involves a pressure ulcer, a wound care specialist needs to be involved, because a WOC nurse or other wound specialist possesses knowledge about the development of pressure injuries and can identify whether a wound is indeed a pressure injury rather than moisture associated or some other etiology. (Black, 2019) Once the analysis is complete, the information gained will inform how processes, equipment, education or staffing can be improved to prevent future injuries.

2. Analyze one (not both) of the case studies from page three of this document and describe the system failures that led to the pressure injury in that situation.

Case b: This patient has several risk factors for development of pressure injury, notably poorly controlled diabetes (HbA1c of 13.2% and blood glucose of 220 mg/dL on admission). He was also found to have coronary artery disease, possibly leading to reduced tissue perfusion. I would suggest, given the high A1c, this individual has knowledge deficits and a diet that may not include sufficient intake of vitamins. Eight hours in surgery is a risk factor for developing a pressure injury; however, the timing and location of the wound suggest that this individual sustained a deep pressure injury before he went to the OR. Typically, it takes 48 hours for a deep tissue injury to appear deep purple or maroon on visual inspection. Also, one would expect pressure to affect the buttocks or heels while lying supine in the OR--but not necessarily the coccyx. It is most likely that he experienced a pressure injury involving shearing forces while in bed and alternating between a high fowlers position and lowered HOB without extra measures taken to prevent this injury. Sliding down in bed or raising the head of the bed results in shearing, in which the soft tissue is moving in opposition to the structural body. The nurse's admission assessment suggests he had good mobility, but that doesn't mean he was getting out of bed with any frequency or regularly repositioning himself. As Ayello et al (2020) point out, the Braden scale doesn't take all risk factors into account, and a comprehensive assessment needs to include risk factors such as diabetes mellitus, peripheral arterial disease, and others. Palpation may have helped detect the injury earlier because DTI cannot be detected early by visual inspection alone (Peart, 2016). We don't know whether further full skin assessments were made between admission and 18 hours post-surgery, but earlier detection may have improved the outcome. Once the injury was identified, was the plan of care optimum? The alternating pressure mattress was important, but what other treatments were put into place? Were nutrition, glucose

control, and the need for offloading addressed? Were medications reviewed? Anticoagulants or corticosteroids might have also played a role in the deterioration of this patient's coccyx tissues.

3. Based on these findings, develop a comprehensive pressure injury prevention plan for the organization.

    1) Implement full skin assessment process to include additional risk factors such as comorbidities and assessment intervals. If possible, have these parameters added to the EHR. The EPUAP/NPIAP/PPIA 2019 Guideline Recommendations and Good Practice Statement should be employed, as they include a comprehensive list of additional factors to consider, such as diabetes mellitus, perfusion and circulation deficits, nutritional status, and other parameters. (Ayello et al, 2020)
    2) Identify specific shearing injury prevention measures for patients with comorbidity risk factors and implement a care plan bundle for PI risk. These should include use of lift sheets, limiting the HOB control to no higher than 30°, and repositioning the patient for sitting upright into an appropriately padded chair or to a higher seating position in bed only with assistance, lifting the knees before elevating the head of the bed to reduce shearing forces.
    3) Implement staff in-service or mandatory computer-based training for direct care and nursing staff regarding full assessment of risk factors related to comorbidities and measures to prevent injuries due to friction, shear, and moisture. These measures should also be included on the report sheet for direct care staff to ensure the information (such as HOB restriction) is passed from shift to shift.
    4) Require that documentation of skin risk assessments incorporate the additional risk factors and what specific measures were taken to prevent injury. Following initial admission assessment, require daily documented assessments to ensure that the measures in place are effective (or more frequent if very high risk). Additional assessment required when patients return from procedures lasting more than two hours, or whenever the patient's status changes.
    5) Cost benefit determination regarding upgrading mattresses or support surfaces.
    6) Develop and implement a care plan bundle for treatment of PI when identified. In addition to specialized mattresses, offloading the area needs to be considered, along with other treatments such as ultrasound that have recently shown promise in arresting progression to open Stage 3 or 4 wounds. (Black & Hotaling, 2021)

4. Propose a plan of care to monitor the results of the organization wide, comprehensive pressure injury prevention plan.

    Maintain data per day of the week and monthly rates of pressure injury per unit. Internal reporting should include data on where the injury occurred (and where it didn't). Review of this data throughout the organization over time will help to identify areas with higher rates of PI, along with the conditions that led to the injuries. These can then be systematically addressed by reevaluating measures and

systems in place. For example, maybe the support surfaces in the OR need to be replaced. Using organization-wide prevention and intervention measures, such as those suggested under question three above, will help team leaders identify what interventions are working and suggest where improvement is needed. Team leaders should consider whether there have been reductions in PI and, if not, the responsible factors and how to address them. Make the data available to all staff, whether it is good or bad, to serve as a compass and include them as part of the solution. Follow up on the identification of trends via open discussion with staff, who need reinforcement when things are going well but also need to feel they can be heard when the solutions involve them.

Identify a PI Prevention chief, who will oversee the program and direct course corrections. Ideally this person is a wound specialist and can take an active role in keeping abreast of new research and products and implement best practices as they are identified. Analysis of the cost of any injuries needs to be compared systemically to the cost of prevention measures to support requests for upgrades in equipment, process development, education resources, or staffing.

5. List the references used & cited in this assignment.
    a. *See the course syllabus for specific requirements on references for all assignments.*

Peart, J. (2016). The aetiology of deep tissue injury: a literature review. *British Journal of Nursing*, *25*(15), 840–843. https://doi.org/10.12968/bjon.2016.25.15.840

Black, J., & Hotaling, P. (2021). Ten top tips: mitigating deep tissue pressure injury. *Wounds International*, *12*(2), 8–12.

R.B. Turnbull, Jr., MD. [School of WOC Nursing Education] (2019, Agust 23) *Pressure injury assessment & management*. YouTube. https://www.youtube.com/watch?v=lGbqTHUGxqo

Ayello, E., Baranoski, S., Cuddigan, J., Gefen, A., Berlowitz, D., Smart, H., Harris Jicman, W. Pressure injuries. (2020) In Baranoski, S. & Ayello, E. (Eds.), *Wound Care Essentials: Practice Principles* 5th ed., pp.370-400. Wolters Kluwer

Select just one (not both) to respond to the learning objectives listed on page two.

a. A patient is admitted to home care after a cauda equina injury. The injury occurred 2 weeks ago at her home and she was then admitted to the hospital for severe lower back pain and numbness in the lower extremities. During the hospitalization, she developed urinary and fecal incontinence. Surgery was performed to repair the injury and after an unremarkable recovery, she is referred to home health care for physical therapy and skilled nursing care. The surgical site is well approximated without drainage. She has a comorbid condition of diabetes, continues to have numbness in the lower extremities along with urinary and fecal incontinence, and spends most of her day in a recliner chair. On admission to home care she has no skin conditions noted and her blood sugar is 165 mg/dL. After 2 weeks she develops a fever of 100.8 F. After 3 weeks of home care a 2.5cm length x 3.0cm width area of thick, dense eschar is noted over her sacral area, and she is referred to the WOC nurse for evaluation. Explain what risk factors led to the sacral wound and how you would set up her plan of care.

b. A 58 year old patient with a history of uncontrolled diabetes is admitted to the ED. He was discovered unconscious in his back yard by neighbors who called 911. He was transported to the ED of Acme Hospital where he regained consciousness. His blood glucose was 220 mg/dL, and his HbA1c is 13.2%. He is also experiencing mild chest pain, nausea, and tingling in his left arm. He is admitted to the hospital to rule out MI and to gain control of his blood glucose level. On admission, his risk assessment for skin breakdown indicated a 20 or very low risk. After several tests to determine the cause of his chest pain, he is diagnosed with coronary artery disease and is in need of bypass surgery to open three coronary arteries. He goes to surgery on day three of his admission and is in the OR for 8 hours in a supine position. 18 hours after surgery, his nurse notices he has a painful deep purple bruised area in the coccyx region and contacts the WOC nurse to evaluate the lesion. At this point the patient is placed on an active alternating pressure powered air mattress. Five days later the bruised area in the coccyx begins to show evidence of an open wound, with measurements of 4.0 length x 1.0 cm width, and deep in the natal cleft there is dense slough with mild serous drainage. The surrounding skin is indurated with redness and evidence of a resolving bruise. Explain what risk factors led to the sacral injury and how you would set up his plan of care.