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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.

See course syllabus for reference requirements

Using academic writing standards and APA formatting of references and citations, respond to each of the following learning objectives. Using this document, **enter your responses directly next to each objective listed below.** Responses should be 150-350 words in length. Be sure to carefully review the assignment rubric on page one for specific details on how this assignment will be evaluated for points. Save the completed document as the assignment title with your name, and submit to the dropbox.

1. Describe the incidence and prevalence of catheter associated urinary tract infection (CAUTI).

In relation to catheter-associated urinary tract infections (CAUTI) incidence refers to the number or percentage of individual patients who develop a CAUTI over a specific period of time, while prevalence refers to the total number of existing cases within a specific population at a given point in time (R. B. Turnbull, Jr. MD School of WOC Nursing Education, 2022). An example of incidence in relation to CAUTI is that 50% of all CAUTIs can be prevented (Newman, 2022). Another is that 80% of urinary tract infections are associated with a patient having an indwelling urinary catheter (Newman, 2022). An example of the prevalence of CAUTI is available in the study completed by Sands et al. (2023), which states that CAUTI rates in a population of COVID-19 patients were 2.7 times higher than in non-COVID patients. Another study that examines the prevalence of CAUTI looked at patients undergoing a cesarean section with a urinary catheter placed in the operating room and found a 1.5% rate of infection (Moulton et al., 2018).

2. List factors associated with the development of CAUTI.

There are many factors associated with the development of a catheter-associated urinary tract infection (CAUTI). The main factor is a prolonged duration, more than 6 days, of catheterization (Newman, 2022). Inadequate care of the catheter through poor insertion techniques, cleaning, hand hygiene, and maintenance is another factor associated with CAUTI development due to the risk of bacterial migration (Rubi et al., 2022). The material of the catheter itself is another risk factor as certain materials such as latex are more prone to bacterial adherence and biofilm development (Rubi et al., 2022). Elderly patients, those with compromised immune systems, and those with underlying co-morbidities such as diabetes, kidney disease, and urinary retention can increase the risk of infection (Rubi et al., 2022). Female patients are also at a higher risk due to their anatomy. Having a moist periurethral environment, shorter urethral length, and closer urethral proximity to the anus increases the risk of colonization and proliferation (Nelles & Ermer-Seltun, 2022).

3. Discuss nursing evidence-based interventions for CAUTI prevention and management.

Catheter-associated urinary tract infections are a significant concern in healthcare settings. Evidence-based interventions for CAUTI prevention and management are useful tools for hospitals and nurses to assist in reducing the rate of this hospital-acquired infection risk. Since prolonged catheterization is the main risk factor for CAUTI development one of the first interventions should be ensuring that the patient has an appropriate indication for the use of an indwelling catheter (Newman, 2022). Patients without indication should utilize alternative methods such as bladder scanning or intermittent catheterization. Another intervention is the proper technique for catheter insertion and aseptic technique (Newman, 2022). The use of sterile closed urinary drainage systems is another intervention to reduce contamination risk (Rubi et al., 2022).

Regular catheter care and maintenance including securement is another valuable intervention (Newman, 2022). Early catheter removal and implementation of a bladder training program aid in reducing the amount of exposure risk time (Newman, 2022). The proper positioning of the drainage bag and ensuring that the tubing is unobstructed without kinks or loops have also been shown to aid in reducing CAUTIS as it helps to ensure unobstructed urine flow (Newman, 2022). A final intervention is a regular assessment. Electronic medical records programs can be programmed to include daily need assessments as well as to document cleaning, changing, and urine evaluation in the catheter system. Staff training should also be implemented through education modules, checkoffs, and assessments of CAUTI prevention techniques and catheter insertion and care (Rubi et al., 2022).

4. Identify selection criteria for appropriate indwelling catheter size.

Selection criteria for an appropriate indwelling catheter size include factors such as the patient's age, sex, weight, and medical condition. For most patients ages 13 and older a size 14 French (Fr) catheter is recommended (Newman, 2022). Patients sexed as female will usually have a 12 or 14Fr catheter placed, while patients sexed as male may have a 14 or 16 Fr. It is important to note that Newman (2022), does not recommend routine use of catheters sized 16 Fr or larger as they can erode the urethral mucosa and bladder neck, cause strictures, trauma, and bladder spasms, and may not allow for proper drainage of the secretions of the periurethral glands which can lead to infection and irritation. Pediatric patients will require a smaller catheter size. A 5-6 Fr is the best choice for premature infants while a 5-8 Fr is the optimal size for newborns weighing up to 9kg, and toddlers weighing up to 30 kg (Newman, 2022). Larger-sized catheters may be necessary for certain patients. For example, an 18-20 Fr catheter is recommended for adult patients with hematuria or blood clots in their urine (Newman, 2022). Another example is in adults with urinary obstruction, these patients may need a 20-24 Fr, and for patients with prostatic bleeding a 30 Fr is the recommended size (Newman, 2022). Balloon volumes are generally 5-10mL but also can be 20-30mL, chosen in patients experiencing leakage or prostatic bleeding (Newman, 2022).

5. Differentiate between a urinary tract infection and colonization.

Urinary tract infection (UTI) and colonization are related concepts, but they have distinct meanings in the context of bacterial presence in the urinary system. Colonization refers to the presence of bacteria or microorganisms in the urinary tract without causing any clinical signs or symptoms of infection. In cases of colonization, antibiotic therapy is generally not indicated as it can lead to the development of multidrug-resistant organisms (Nelles & Ermer-Seltun, 2022). The only time screening and treatment of colonization is recommended is in patients who are pregnant or who will be undergoing urologic procedures that may lead to damage or the urethral mucosa (Nelles & Ermer-Seltun, 2022). A UTI occurs when bacteria or other pathogens enter the urinary tract and multiply leading to an infection. UTIs are often associated with symptoms

such as frequent and painful urination, urgency, cloudy or bloody urine, suprapubic tenderness, sometimes fever, altered mental status, and nocturia (Nelles & Ermer-Seltun, 2022). Patients with a UTI are often treated with antibiotics.

List your references used for this assignment (*See the course syllabus for specific requirements on references for all assignments*).

Moulton, L., Lachiewicz, M., Liu, X., & Goje, O. (2018). Catheter-associated urinary tract infection (CAUTI) after term cesarean delivery: incidence and risk factors at a multi-center academic institution. *The journal of maternal-fetal & neonatal medicine: the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians*, 31(3), 395–400. <https://doi.org/10.1080/14767058.2017.1286316>.

Nelles, K., & Ermer-Seltun, J. M. (2022). Urinary tract infection (UTI) prevention and management in adults. In J. M. Ermer-Seltun, & S. Engberg (Eds.), *Wound, Ostomy, and Continence Nurses Society core curriculum: Continence management* (2nd ed., pp. 382-404). Wolters Kluwer.

Newman, D. K. (2022). Indwelling and intermittent urinary catheterization. In J. M. Ermer-Seltun, & S. Engberg (Eds.), *Wound, Ostomy, and Continence Nurses Society core curriculum: Continence management* (2nd ed., pp. 405-432). Wolters Kluwer.

R.B. Turnbull, Jr. MD School of WOC Nursing Education. (2022). *Introduction to urinary incontinence*. [PowerPoint slides]. Vimeo@CCF.

Rubi, H., Mudey, G., & Kunjalwar, R. (2022). Catheter-associated urinary tract infection (CAUTI). *Cureus*, 14(10), Article e30385. <https://doi.org/10.7759/cureus.30385>.

Sands, K. E., Blanchard, E. J., Fraker, S., Korwek, K., & Cuffe, M. (2023). Healthcare-associated infections among hospitalized patients with COVID-19, March 2020-March 2022. *JAMA network open*, 6(4), Article e238059. <https://doi.org/10.1001/jamanetworkopen.2023.8059>.