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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 it to the drobox.

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

Catheter-associated urinary tract infection (CAUTI) is a common healthcare-associated infection that occurs when bacteria or other pathogens enter the urinary tract through a urinary catheter. Catheter-associated urinary tract infection (CAUTI) is the most common healthcare-associated infection and cause of secondary bloodstream infections (Werneburg, 2022). Incidence refers to the number of new cases of CAUTI that arise within a given population over a specific period. Prevalence, however, represents the total number of individuals affected by CAUTI within a population at a given time, including new and existing cases.

The incidence and prevalence of CAUTI can vary depending on various factors, such as the setting (e.g., hospitals, nursing homes), patient population (e.g., elderly, critically ill), and adherence to preventive measures. CAUTIs are commonly associated with indwelling urinary catheters, widely used in healthcare facilities for various medical conditions. Catheter-associated urinary tract infections (CAUTI) represent approximately 9% of all hospital-acquired infections, and approximately 65% - 70% of CAUTIs are believed to be preventable (Van Decker et al., 2021).

Despite efforts to reduce the incidence of CAUTIs through infection prevention strategies, it remains a significant concern in healthcare settings. Incidence rates can fluctuate based on the efficiency of preventive measures and healthcare practices. Prevalence rates provide an overall snapshot of the burden of CAUTI in each population at a specific time point, reflecting both new and ongoing cases.

Continuous efforts are being made to mitigate the risk of CAUTIs, such as implementing strict catheter insertion protocols, proper catheter maintenance, adhering to infection prevention guidelines, and promoting early catheter removal when it is no longer necessary. Healthcare facilities strive to reduce the incidence and prevalence of catheter-associated urinary tract infections by focusing on these preventive measures.

2. List factors associated with the development of CAUTI.

There are several risk factors associated with the development of CAUTI. CAUTIs occur when germs enter and infect the urinary tract through the urinary catheter. This could happen upon insertion if the drainage bag is not emptied enough, contamination of bacteria from a bowel movement, irregular cleaning, and if urine from the catheter bag flows backward into the bladder (Florida Department of Health, 2019). Some of these risk factors include prolonged use of urinary catheters, poor catheter insertion technique, poor hand hygiene, and lack of appropriate care and maintenance of the catheter. Inadequate hygiene and improper cleaning techniques when handling and maintaining urinary catheters can introduce bacteria into the urinary tract, leading to infection—other risk factors including female gender, advanced age, comorbid conditions, and immunosuppression. If the catheter becomes blocked or obstructed, it can cause stagnant urine to accumulate, creating an environment for bacterial growth and infection. Failure to properly secure the catheter, maintain a closed system, or perform regular catheter site care can increase the risk of CAUTI. Identifying and addressing these risk factors is essential to prevent the development and spread of CAUTI.

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

CAUTI prevention and management in nursing practice involve evidence-based interventions. The following interventions are based on the CDC's 2009 Guidelines for Prevention of Catheter-Associated Urinary Tract Infections. The evidence-based tool includes an algorithm that helps determine the suitability of a urinary catheter by considering nursing screening and assessment. In addition, the tool suggests alternatives for managing retention and incontinence, timely removal, and a checklist on catheter insertion, cues for essential maintenance, and post-removal care.

Implementing a bundle approach involves a combination of evidence-based practices. Proper catheter insertion and maintenance, using aseptic techniques, daily assessment of catheter necessity, and prompt removal of unnecessary catheters. Educating healthcare professionals on CAUTI prevention and management is crucial. Nurses should regularly assess the need for catheters and document their findings. This will help identify patients who may no longer require catheters, reducing the risk of CAUTI. Implementing bladder bundle management involves encouraging early ambulation, ensuring adequate hydration, and promoting regular voiding to minimize the need for indwelling catheters.

4. Identify selection criteria for appropriate indwelling catheter size.

When selecting an appropriate indwelling catheter size, several criteria should be considered. Indwelling catheters, also known as Foley catheters, come in various sizes. The most common sizes range from 12 Fr (French) to 24 Fr. The French scale is a measurement system used to indicate the diameter of a catheter. The increase in size represents an increase in diameter.

The appropriate size of an indwelling catheter depends on the patient's factors, including body size, urinary output, and clinical indication. Generally, adult females may use catheters ranging from 14 to 16 Fr. In contrast, adult males often require larger sizes, typically ranging from 16 Fr to 18 Fr. Most people can go a size up or down without a problem, and the only impact they would see is the speed of the flow. However, for men, if the catheter diameter is smaller than the diameter of the urethra, urine may leak from around the catheter instead of in a smooth stream through the catheter (Smith, 2023).

The catheter size should also be appropriate for the volume and viscosity of the drained urine. Other factors to be considered include the patient's level of mobility and activity, any underlying medical conditions, and the expected duration of catheterization. Ultimately, selecting an appropriate catheter size should be based on carefully considering all relevant factors to minimize the risk of complications and ensure optimal patient comfort and safety.

5. Differentiate between a urinary tract infection and colonization.

A urinary tract infection (UTI) and colonization are two related but distinct concepts in urinary tract health.

Urinary tract infection (UTI) causes inflammation of the bladder wall and urethra, which, in the continent individual, results in urinary urgency, frequency, and dysuria (Ermer-Seltun & Engberg, 2022). When bacteria or other pathogens enter the urinary tract and multiply, it leads to an infection. The presence of these symptoms and the detection of bacteria in the urine cultures support the diagnosis of a UTI. Treatment for UTIs often involves antibiotics to clear the infection.

A patient with asymptomatic bacteriuria is defined as having colonization with one or more organisms in a urine specimen without symptoms or infection (Crader et al., 2023). In colonization, bacteria may be present in the urine, but the individual does not experience any discomfort or clinical manifestations associated with an infection. The presence of bacteria in the urine without accompanying symptoms of a UTI is generally

considered a benign condition and does not require treatment. Typical patients who often colonize the urine are those older than 65 years of age or who have one of the following: chronic indwelling urinary catheters, neurogenic bladders, or a urinary stoma. Postmenopausal women may be at higher risk for colonization due to a loss of an acidic vaginal pH (Crader et al., 2023).

The distinction between a UTI and colonization can sometimes be challenging. Healthcare professionals may rely on additional diagnostic tests and clinical judgment to determine the presence of an active infection versus colonization.

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

Florida Department of Health. (2019). CAUTI – Catheter-Associated Urinary Tract Infections. Florida Health. Last reviewed July 17, 2023, from https://www.floridahealth.gov/diseases-and-conditions/cauti-catheter-associated-urinary-tract-infections/index.html

Centers for Disease Control and Prevention (CDC). (2010). Toolkit for implementing a program to prevent catheter-associated urinary tract infections. Retrieved from: https://www.cdc.gov/hai/pdfs/toolkits/cautitoolkit_3_10.pdf

Van Decker, S. G., Bosch, N., & Murphy, J. (2021). Catheter-associated urinary tract infection reduction in critical care units: A bundled care model. *BMJ Open Quality, 10*(4). https://doi.org/10.1136/bmjoq-2021-001534

Werneburg, G. T. (2022). Catheter-Associated Urinary Tract Infections: Current Challenges and Future Prospects. *Research and Reports in Urology, 14,* 109-133. https://doi.org/10.2147/RRU.S273663

Smith, J. (2023). A Comprehensive Guide to Catheters. CompactCath. Retrieved from https://compactcath.com/blog/catheter-guide/

Ermer-Sultan, J. M., & Engberg, S. (2022). Continence Care Nursing: An Overview. In J. M. Ermer-Seltun, & S. Engberg. (Eds.)., *Wound, Ostomy, and Continence Nurses Society core curriculum: Continence management* [2nd ed., pp. 33-44]. Wolters Kluwer.

Crader, M. F., Kharsa, A., & Leslie, S. (2023). National Center for Biotechnology Information (NCBI). Urinary Tract Infection. In StatPearls. Retrieved from https://www.ncbi.nih.gov/books/NBK482276/