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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).

A CAUTI is described as a complicated UTI due to a foreign body in the urinary tract. At least 80% of UTI's are associated with an indwelling catheter (Newman, 2022). Since 2008, CMS has changed reimbursement regulations that call a CAUTI preventable, and do not reimburse additional costs related to treatment. CAUTI's are serious infections that can lead to urosepsis and septicemia (Newman, 2022). Despite CMS changes, CAUTI's continue to be one of the most common healthcare acquired infections. According to the most updated information available by the CDC, there were approximately 19,738 catheter-associated urinary tract infections in 2020 of the 3,749 acute care hospitals that reported. The standardized infection ratio for CAUTI infections was 0.75 across acute care hospitals. The CDC also reports that the incidence has been down-trending yearly, which shows a positive change (CDC, 2022).

2. List factors associated with the development of CAUTI.

Infections are the most severe and common catheter related complication because they can lead to sepsis and death. It also prolongs hospital stays, and increases patients morbidity and mortality (Newman, 2022). To improve quality of care, keep people healthy and alive, and also have hospitals reimbursed for the services they provide, understanding risk factors can be extremely helpful. The main significant risk factor for developing a CAUTI is prolonged catheterization greater than 6 days. Other possible risk factors include being female, catheter insertion outside of the OR, urology procedures, diabetes, malnutrition and azotemia (Newman, 2022). Overall, there have been few studies that identify the CAUTI risk factors. A study done in 1974 by Garibaldi found additional risk factors that include age greater than 50 years old, higher severity of illness, non-surgical illness, and no systemic antibiotics. Since this study in 1974, few other studies have focused on risk factors in the development of CAUTI's (Letica-Kriegel, 2019).

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

It is estimated that 69% of CAUTI events are avoidable (Letica-Kriegel, 2019). Efforts to reduce CAUTI rates include; avoiding unnecessary catheterizations, reducing the duration of catheterizations, and emphasizing the antiseptic technique for insertion and using hydrophilic-coated

catheters. Reducing the duration of catheter insertion days is done using a series of reminders and a daily risk assessment to best determine when catheters can be removed (Letica-Kriegel, 2019). The mnemonic ABCDE is a checklist reminder for the prevention of CAUTI's. A stands for: adherence to infection control principles, standard supplies, procedures and processes. B represents: bladder ultrasound protocol in place to avoid unnecessary catheterizations. C for catheter alternatives, D for don't use the foley unless medically appropriate, and E- early removal using a reminder or nurse initiated protocol (Newman, 2022).

Nurses and providers must question whether the catheter is really necessary, if it can be removed and what other bladder management measures can be used. Appropriate indications for indwelling catheter insertion are: postoperative urinary retention, acute retention that requires immediate attention, need for accurate measurements in critically ill patients that cannot be measured in another way, patients who require prolonged immobilization, assist in healing open sacral or perineal wounds in incontinent patients, requiring bladder irrigation, administering of drugs into the bladder, palliative care, perioperatively, a urologic, gynecologic or perineal procedure, anticipated prolonged duration of surgery, operative patients with UI, or need for hemodynamic monitoring of fluids during surgery (Newman, 2022). Inappropriate catheter insertion guidelines are for patients with urinary incontinence, for perceived comfort in patients with incontinence, to obtain a urine sample in a patient who is continent, and prolonged postoperatively without appropriate indications (Newman, 2022).

Aseptic technique for insertion is the standard of practice for catheter insertion. Hand hygiene is the most important factor in preventing infections (Newman, 2022). Sterile equipment, maintaining a sterile field, and adequate cleansing of the patient's perineum is vital for preventing infections

Reminders can be created to notify caregivers of reassessing the need to continue the indwelling catheter. Prompt removal should be done when the catheter is no longer necessary or appropriate. Nurse-driven algorithms with automatic removal orders have been shown to decrease the incidence of infection and catheter use. The standard of practice is to remove the catheter at midnight so the bladder has time to refill and result in a successful early morning void and faster return rate for a regular voiding pattern (Newman, 2022).

4. Identify selection criteria for appropriate indwelling catheter size.

Catheter size is measured by the outer diameter using a measurement scale known as the French scale and the term “French (Fr)” size scale was created (Newman, 2022). In adults, the standard size is a 14 Fr. A larger or smaller size can also be used for different urologic reasons. Larger catheter sizes are not recommended because the larger diameter can cause erosion of the bladder neck and urethral mucosa. They also inhibit periurethral gland secretions which can lead to infection or irritation and a larger size catheter can also cause a stricture to form. The large catheters can also particularly impact women as the persistent tension and increased weight of large balloons can harm the bladder neck and sphincter causing damage and leaving the woman incontinent. Large catheters also increase the risk of bladder spasms. Larger sizes are usually used to help drain hematuria and clots (Newman, 2022).

The typical size for a person over the age of 13 years old is a 12-14 Fr for females, and a 14-16 Fr for males. In an adult with hematuria or clots, an 18-20 Fr may be appropriate. An adult with an obstruction can use a 20-24 Fr, and an adult with active prostatic bleeding may require a 30 Fr with a 30mL balloon. In school aged children an 8-10 Fr is appropriate, a newborn and toddler will require a 5-8 Fr, and a premature infant will need a 5-6 Fr indwelling catheter. The standard length of indwelling catheters are 41-44cm, although specialized lengths are available (Newman, 2022).

5. Differentiate between a urinary tract infection and colonization.

Bacteriuria is defined as bacteria present in the urine and can either be symptomatic or asymptomatic. Indwelling catheters Patients with asymptomatic bacteriuria have colonization with one or more organisms in the urine specimen, but have no symptoms of infection. Bacteriuria without symptoms is not an infection. Many patients have long term indwelling catheters without symptoms but there is usually a significant amount of bacteria present in the urine (Crader et. al, 2021) According to Newman (2022) all individuals with long term catheters will develop bacteriuria within one month of the catheter insertion.

Symptomatic bacteriuria is an infection of the urinary tract, and is usually caused by one single organism (Crader et. al, 2021) Symptoms of a UTI can include a fever of over 38 degrees celsius, suprapubic tenderness, costovertebral angle tenderness, although those with cognitive impairments can be especially difficult to diagnose. The patient must have a urine culture with no more than two organisms identified, with at least one with a bacterial load of greater than 10^5 CFU/mL. Possible signs in an elderly patient are increased restlessness and altered mental status, or a change in health not related to any other cause and can be a diagnosis of exclusion (Newman, 2022).

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

Catheter-associated urinary tract infections. Center for Disease Control and Prevention. (n.d.). Retrieved May 7, 2022, from <https://arpsp.cdc.gov/profile/infections/cauti?hidden=&redirect=true>

Crader, M., Kharsa, A., & Leslie, S. (2021). *Bacteriuria*. StatPearls Publishing. <https://doi.org/https://www.ncbi.nlm.nih.gov/books/NBK482276/>

Letica-Kriegel, A. S., Salmasian, H., Vawdrey, D. K., Youngerman, B. E., Green, R. A., Furuya, E. Y., Calfee, D. P., & Perotte, R. (2019). Identifying the risk factors for catheter-associated urinary tract infections: A large cross-sectional study of six hospitals. *BMJ Open*, 9(2). <https://doi.org/10.1136/bmjopen-2018-022137>

Newman, D. Wooldridge, L. S. (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.114-127). Wolters Kluwer.