Using academic writing standards and APA formatting of references, respond to each of the following learning objectives. Using this document, enter the responses directly next to the corresponding learning objective in the grid below. Responses should be 150-350 words in length. Scroll down to see assignment rubric for specific details on how the project will be assessed and how the will be points awarded. Save the completed document as the assignment title with your name, and submit to the dropbox.

Learning Objective	Response
1. Describe the incidence and prevalence of catheter associated urinary tract infection (CAUTI).	The National Institute of Mental Health (2017) states incidence is reported as a number, whereas prevalence is reported as a number or a percentage. Incidence is the number of new cases of a specific issue that develops in a specific population in a specific amount of time, and prevalence is the percentage of people who have a specific issue in a given time period, without taking into account when the issue was first developed. For example, in this case, we can use catheter associated urinary tract infection (CAUTI) as the issue. Incidence would be the number of new CAUTI that develops over a year (for example). Prevalence would be the percentage of CAUTI that developed in patients in the same time period. Letica-Kriegel et al. (2019, February 21) conducted a study to determine the risk factors for CAUTI. Data collected was for the time period between January 1, 2012 and March 31, 2016. The study included 47,926 patients with a total of 61,047 catheterizations, and there were 861 cases of CAUTI. Therefore, the incidence of CAUTI in this case study is 861. The prevalence of CAUTI in this case study is 1.41%.
2. List factors associated with the development of CAUTI.	Moore and Franklin (2016) state CAUTI is a major complication of having an indwelling urinary catheter (over 30 days) and it starts with the development of biofilm inside and outside the catheter. The biofilm develops within 24 hours after first being inserted and increases the longer the patient has the catheter, which eventually leads to the development of a fixed community of organisms. This community of organisms is protected by a matrix which makes them immune to the effects of antibiotics. The biofilm usually starts at the periurethral area, the organisms colonize on the external surface, work their way up the catheter, colonizing on the internal surface, and then they eventually end up in the bladder. New organisms appear between 3% to 7% per day.

	Moore and Franklin state using a stabilization support device helps decrease movement of the periurethral organisms, which helps delay CAUTI; therefore, if there is no stabilization device in place, CAUTI can begin sooner. Since CAUTI is a major complication of having an indwelling catheter, the best way to prevent it is to avoid applying one if possible or removing it as soon as possible (Moore & Franklin). It is crucial that the patient meets the criteria for catheter insertion in the first place. The following reasons for inserting an indwelling catheter do not meet the criteria: (1) to manage incontinence; (2) to get a urine sample, even if the patient can void; and (3) leaving the catheter in place long term after a surgery. Escherichia coli is the most common organism that causes urinary tract infections (Moore & Franklin). Peri care should be provided to patient as soon as possible after having a bowel movement to help prevent the spread of the organism. During peri care, it's especially important to wipe from front to back to prevent the organism from being spread anywhere near the catheter.
3. Discuss nursing evidence-based interventions for CAUTI prevention and management.	Moore and Franklin (2016) state the best way to prevent complications of an indwelling catheter (one of which is a CAUTI), is to avoid it altogether or discontinue and try another method (e.g., condom catheter, pads or toileting). Another way to help prevent CAUTI is to ensure patient's need for an indwelling catheter falls under the HICPAC CDC guidelines, as follows: (1) for retention or bladder obstruction; (2) strict intake and output; (3) for short term use after certain surgeries; and (4) end of life comfort measure (Moore & Franklin). Johns Hopkins Medicine (n.d.) report additional evidence-based interventions to help prevent CAUTI, as follows: (1) perform hand hygiene before and after dealing with a catheter; (2) assess the need for the catheter on a daily basis, and if there's no need, discontinue; (3) the aseptic technique must always be used when placing a catheter and providing maintenance care; (4) ensure tubing is free of kinks and twists; (5) empty the drainage bag regularly and always use a separate and clean container for each patient; (6) put into place alerts or reminders to remove catheters; (7) ensure the unit has guidelines or protocols for catheter removals initiated by nurses; and (8) staff should be provided education and performance feedback on catheters Wilde & Fader (2016) emphasize that the level of the drainage bag should always be

	below the level of the bladder; otherwise, urine will drain back into the bladder, which may cause a urinary tract infection. Also, drainage bags shouldn't touch the floor because of the risk of bacterial contamination (Pandian & Drake, 2016). There is no research on whether changing the drainage bags every few days is beneficial and how the overnight bag should be cleaned, other than soap and water.
4. Identify selection criteria for appropriate indwelling catheter size.	There are various considerations when choosing the size of a Foley catheter. The first consideration is the balloon size. Once the catheter has been inserted, the balloon is inflated with normal saline (either 10 mL or 30 mL) to prevent the catheter from getting dislodged (Pandian & Drake, 2016). The 30 mL balloon size is used for hemostasis after a patient has had prostatic surgery. The second consideration is the type of Foley (Pandian & Drake). A hematuria catheter is used on patients for retention of blood clots and urine. The hematuria catheter is a triple lumen catheter and each lumen is for the following: (1) infusion of normal saline for the purpose of irrigating the bladder; (2) drainage of urine and blood; and (3) inflation of the balloon. A coude catheter has a curved and pointed tip, to accommodate the curved shape of the prostatic urethra and urethral obstruction, if any. The third consideration is the diameter of the catheter (Pandian & Drake). The size is referred to as French, ranging from 10 French (or 3.3 mm) to 28 French (or 9.3 mm). The right size allows the urine to flow freely (but taking the urine debris, mucous, blood or clots into consideration). Please note that when choosing larger catheters, they can damage the urethra and bladder neck. The fourth consideration is whether a patient is allergic to latex; and, if so, a silicone catheter may be used. Silicone catheters may also be applied for long term use (Pandian & Drake).
5. Differentiate between a urinary tract infection and colonization.	The Centers for Disease Control and Prevention (2019, May 9) describes colonization as the gathering of microorganisms on indwelling urinary catheters soon after they're applied. These microorganisms help the formation of biofilm. The biofilm is immune to antibiotics, which protects the bacteria. Colonization does not cause symptoms in a patient, nor does it need to be treated with antibiotics. Moore and Franklin (2016)

	state colonization is also known as asymptomatic bacteriuria. Doughty and Moore (2016) explains the onset of a urinary tract infection begins with bacteria entering the urinary tract, causing symptoms of urinary urgency, frequency, dysuria, fever and/or chills, flank pain and hematuria. Symptoms of a urinary tract infection in the elderly are unique to them (e.g., altered mental status, sudden onset of incontinence, and change in health status). The diagnosis can be confirmed with a positive urine culture, which will determine which course of antibiotics should be prescribed. If the urinary tract infection is not treated, the bacteria can work its way up to the kidneys and cause an infection there, also known as pyelonephritis (National Kidney Foundation, n.d.).
References *See the course syllabus for specific requirements on references for all assignments.*	Centers for Disease Control and Prevention (2019, May 9) *Healthcare-associated infections*. https://www.cdc.gov/hai/prevent/cauti/indwelling/overview.html Doughty, D. B., & Moore, K. N. (2016). Overview of urinary incontinence and voiding. In D. B. Doughty & K. N. Moore (Eds.), *Wound, Ostomy and Continence Nurses Society™ core curriculum: Continence management* (pp. 58-84). Wolters Kluwer. Johns Hopkins Medicine (n.d.) *Evidence-based best practices for CAUTI prevention*. https://www.hopkinsmedicine.org/heic/docs/CAUTI_prevention.pdf Letica-Kriegel, A. S., Salmasian, H., Vawdrey, D. K., Youngerman, B. E., Green, R. A., Furuya, E. Y., Calfee, D. P., & Perotte, R. (2019, February 21). Identifying the risk factors for catheter-associated urinary tract infections: a large cross-sectional study of six hospitals. *BMJ Open*, *9*(2), Article e022137. http://dx.doi.org/10.1136/bmjopen-2018-022137 Moore, K. N., & Franklin, L. (2016). Indwelling and intermittent catheterization. In D. B. Doughty & K. N. Moore (Eds.), *Wound, Ostomy and Continence Nurses Society™ core curriculum: Continence management* (pp. 735-794). Wolters Kluwer. National Institute of Mental Health (2017). *What is prevalence?* https://www.nimh.nih.gov/health/statistics/what-is-prevalence

	National Kidney Foundation (n.d.) *Urinary tract infections*. https://www.kidney.org/atoz/content/uti Pandian, S. K., & Drake, M. J. (2016). Retention of urine. In D. B. Doughty & K. N. Moore (Eds.), *Wound, Ostomy and Continence Nurses Society™ core curriculum: Continence management* (pp. 231-296). Wolters Kluwer. Wilde, M. H., & Fader, M. (2016). Appropriate use of containment devices and absorbent products. In D. B. Doughty & K. N. Moore (Eds.), *Wound, Ostomy and Continence Nurses Society™ core curriculum: Continence management* (pp. 667-734). Wolters Kluwer.

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	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	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	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

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
	more direct quotes per project.	per project.	less than 40 words per project.	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.