# NR 503 Week 2 Discussion: Epidemiology Methods - Screening for Cervical Cancer

Cervical cancer is the third most common cancer among women, therefore screening for cervical cancer is critical to decreasing the incidence and mortality rates of cervical cancer (Bedell et al., 2020). The Papanicolaou (pap) smear is considered the gold standard for cervical cancer screenings (Bedell et al., 2020). In addition to a pap smear a Human Papillomavirus(HPV) test can also be performed to detect the presence of HPV, which is known to be one of the most common causes of cervical cancer (Centers for Disease Control and Prevention [CDC],2021). Both a pap smear and HPV test are simple procedures that can be performed in a primary care clinic using a speculum to help the provider examine the appearance of the cervix and to collect cells from the cervix for the lab. The collected specimen is sent to a lab where the cells are assessed for a normal or abnormal appearance; or if a HPV test is performed the lab will test the cells for HPV (CDC, 2021). A pap smear and HPV testing are considered screening procedures. If any abnormal results are encountered a colposcopy, or a cervical biopsy, will be conducted to further analyze the findings of the screening tests (CDC, 2021). The United States Preventative Services Task Force (USPSTF) recommends that women begin screenings for cervical cancer at the age of twenty-one and continue through the age of sixty-five as long as adequate prior screening has occurred. This recommendation stems from an increased risk of developing cervical cancer due to potential exposure to high-risk HPV types among this age group. However, the type of screening and the intervals at which reoccurrence of screening changes as women age (USPSTF, 2018). Current recommendations by the USPSTF state that women aged twenty-one to twenty-nine receive cytology screening alone, which is achieved through a pap smear and assessing cells for normal appearance every three years (2018). Cytology testing every three years alone can continue for those aged thirty to sixty-five however, it is recommended that either high-risk HPV testing or co-testing, which includes both cytology and HPV testing, occur every five years. There has been extensive research on the appropriateness of cervical cancer screening and what ages and specific populations in which the benefits outweigh the risks. Research has convincingly demonstrated that cytology screening, high-risk HPV screening, or co-testing can detect precancerous cells and cancerous cells among women aged twenty-one to sixty-five and can significantly decrease the incidence and mortality rates associated with cervical cancer (USPSTF, 2018).

Reliability and validity of the tests utilized in cervical cancer screening is important to preventing women from having to undergo unnecessary procedures and testing such as, a colposcopy, as a result of abnormal pap smear or HPV testing results. Pap smears have been found to be only moderately sensitive, but highly specific in regards to detecting high-grade lesions of cervical cell neoplasia. With a sensitivity level of 55.4% (Najib et al., 2020) there are still a considerable number of women who may have abnormal cells but go undetected during the performance of a pap smear. The sensitivity rate of pap smears is 96.8% (Najib et al., 2020), meaning the pap smear has a high rate in its ability to correctly identify those with disease versus those without. The pap smear has been demonstrated to have a negative predictive value of 64% and a positive predictive value of 93.8% (Issa et al., 2019). The pap smear remains the gold