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Louisiana Tumor Registry; Mei-Chin Hsieh, PhD, CTR; Cristina Lefante, MPH, CTR; Elizabeth Van Dyne, MD, MPH; Natalie Gomez, RN, BSN; Brent Mumphrey, BS; Mary Anne Lynch, MPH; Lauren Maniscalco, MPH; Xiao-Cheng Wu, MD, MPH, CTR

Evaluating the utilization of Lower Anogenital Squamous Terminology (LAST)-2 for pre-invasive cervical cancer using pathology reports

NATIONAL PROGRAM OF CANCER REGISTRIES SUCCESS STORY

SUMMARY: The Louisiana Tumor Registry (LTR) is a participant in the CDC's Pre-invasive Cervical Cancer project, which has been collecting CIN3 cases diagnosed in 2009 onwards. At the onset of the project in 2011, we focused on identifying eligible lesions through terminology that included severe dysplasia, CIN III, squamous carcinoma in-situ (CIS), and adenocarcinoma in-situ (AIS). However, in 2012, the College of American Pathologists (CAP) and American Society for Colposcopy and Cervical Pathology (ASCCP) recommended a 2-tiered (LAST-2) terminology system, through the LAST Standardization Project. The LAST-2 would classify low-grade and high-grade squamous intraepithelial lesions (SIL) for HPV-associated pre-cancerous cervical lesions. A Low-grade SIL (LSIL of LGSIL) is equivalent to CIN1 and a high-grade SIL (HSIL or HGSIL) is equivalent to CIN2 through CIN3. It was also suggested that the level of HGSIL could further be distinguished by biomarker p16 testing. In 2017, the Pre-invasive Cervical Cancer project began to discuss the expansion of eligibility criteria, which led to the question, if pathologists have been solely using LAST-2 for pre-invasive cervical cancers since 2012, are the current CIN3 eligibility criteria excluding eligible lesions from inclusion during pathology review? To address these questions, we at LTR, conducted an audit to evaluate the use of LAST-2 and assist the CDC CIN3 project in developing new CIN3 reporting criteria.

CHALLENGE: Due to the change in terminology amongst pathologists documenting pre-invasive cervical lesions, underreporting of CIN3 cases may occur if we continue to use the 2011 CIN3 eligibility criteria. However, before we could make changes in order to capture all reportable CIN3 cases, we would need to find out how widespread LAST-2 use was amongst Louisiana pathologists.

SOLUTION: We worked alongside staff from the CDC's Pre-invasive Cervical Cancer project to conduct an audit to assess the use of LAST-2 (LSIL/LGSIL and HSIL/HGSIL) and the presence of a p16 testing established by LAST. Beginning In late 2017, we administered a phone survey to 9 labs having high volume of CIN3 cases inquiring on their use of the LAST-2 criteria. Results from the survey were mixed, so we chose five labs of varying caseload, located throughout the state. The chosen labs would re-submit up to 500 pathology reports and LTR staff would re-screen, marking which reports were eligible based on the old as well as the new criteria. The ultimate goal of the audit was to assess lab adherence to LAST-2 and guide the CDC CIN-3 team in developing the new CIN3 eligibility criteria.

RESULTS: Completed in July 2018, the audit showed that all five selected labs are using the 2-tiered (LAST-2) terminology system with a large percentage using the LAST-2 alongside earlier terminology. By including LAST-2 to determine reportable CIN3 cases, we identified 347 cases that would have previously been ignored. This increased our caseload about 42%. Almost all new cases based on new terminology can be identified either by HSIL/HGSIL or high grade terminology. Among the 822 reportable CIN3 cases, 128 (15.6%) were solely based on 2011 terminology, 259 (31.5%) were based on HSIL/HGSIL and/or high grade, and one case was exclusively identified through CIN II-III/CIN II/III with positive p16 testing. Four out of five labs performed protein p16 testing for cervical specimens resulting in an average 71% positive result. In order for a more complete accounting of reportable CIN3 cases, it was necessary to continue using current criteria with new LAST-2 terms (HSIL/HGSIL/high grade). Findings from the audit helped define the new eligibility criteria for CIN-3. These new criteria included AIS, CIN III, CIS, Severe Dysplasia, and HSIL with any variations, CIN II/III or CIN II-III positive for p16, and CIN II positive for p16.

SUSTAINING SUCCESS: To sustain this success we will use the new eligibility criteria to identify and abstract CIN3 cases diagnosed in 2019 and after.