THE EVOLUTION OF CERVICAL CANCER TESTS AND EMERGING TOOLS

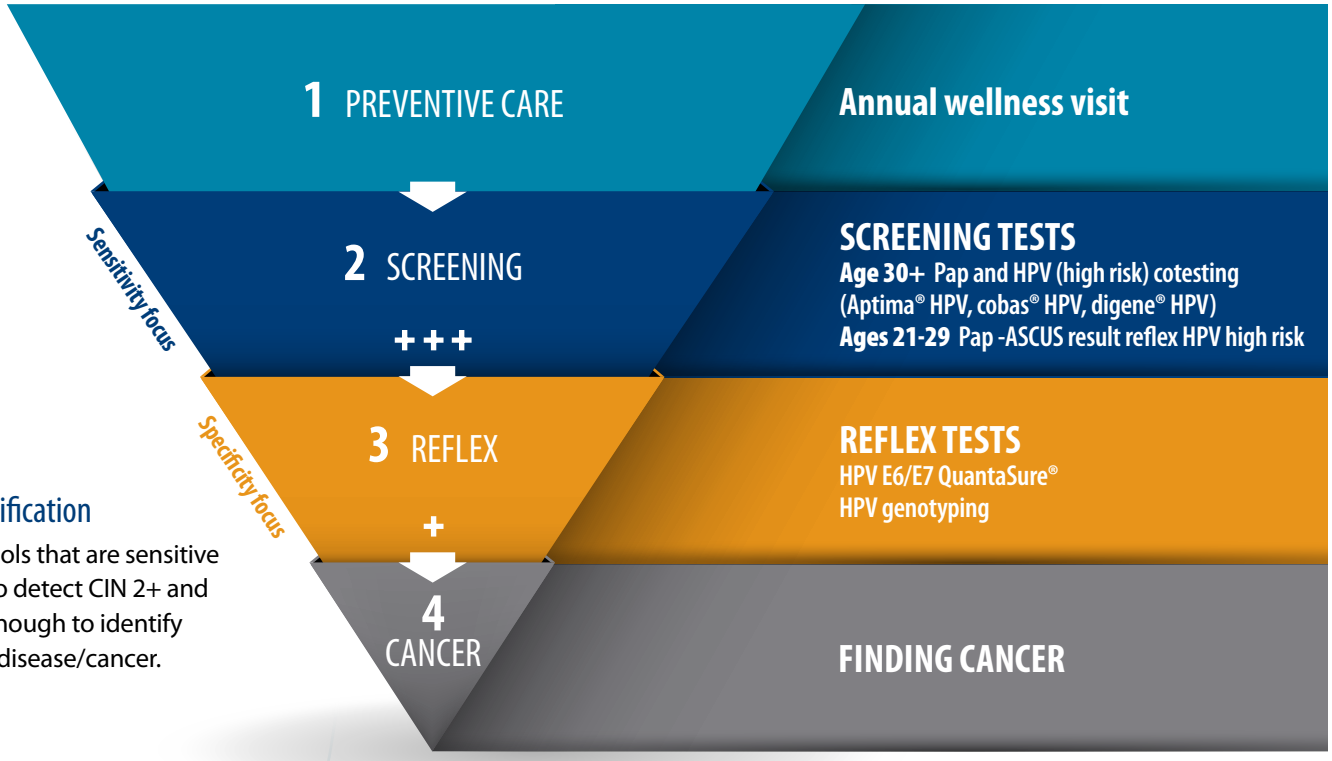
Several decades ago, cervical cancer was a leading cause of cancer death in women. As a result of cervical cancer screening tests in the US, mortality rates have declined, making cervical cancer death now 14th in the ranking.[1] The original, conventional Pap smear started the improvement trend in the 1940s, followed by a more sensitive Pap test with liquid-based technology in the late 1990s. In the early 2000s, cervical cancer screening changed when it was discovered that almost all cancers were caused by HPV, and HPV DNA/RNA screening and genotyping tests were made available.

Additionally, there are tests available that address improved specificity by better determining which HPV-positive women are more likely to progress to CIN2+ and cancer.

As a result of these testing tools for early cervical cancer detection, as well as professional societies' guidelines for screening options by age, there are now multiple test offerings. Differentiating their use may be confusing.

The right test at the right time for the right patient.

Cervical Cancer Test Utilization



Risk Stratification

Testing tools that are sensitive enough to detect CIN 2+ and specific enough to identify only true disease/cancer.

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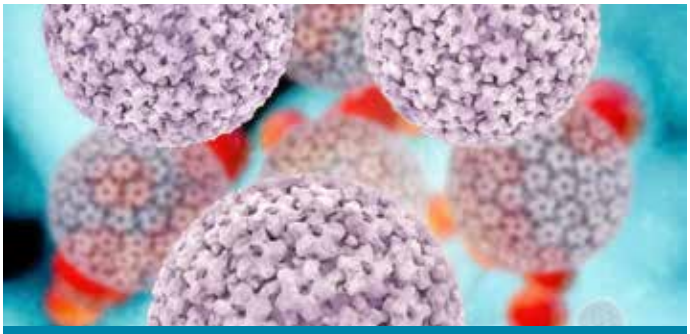

LabCorp offers a broad menu of cervical cancer test options for clinicians.

Clinical Guideline Management for Cervical Cancer and STDs

LabCorp offers an innovative age-based test protocol for cervical cancer screening to help individualize patient care. Clinicians can order a single test number that will individualize cervical cancer and STD testing based on the patient's age (from 21 to 65) in accordance with the American College of Obstetricians and Gynecologists (ACOG) guidelines. Age-based test options:

- **Cervical Cancer Screening Only (Aptima®)**
- **Cervical Cancer and Chlamydia/Gonorrhea Screening (Aptima®)**

Screening for Cervical Cancer

The **sensitivity** for cervical cancer detection is an important criterion in **screening** to avoid false-negative results. Studies show that HPV is found in 99.7% of all cervical carcinomas.[2] When using Pap testing with HPV DNA, the combined sensitivity for detecting high-grade cervical disease and cancer has been reported as more than 99%.[3,4]

LabCorp offers three FDA-approved HPV DNA / RNA high-risk screening methods to be processed along with a liquid-based Pap for cervical cancer **screening** age 30-65:

- **Aptima® HPV mRNA test**
- **Digene® HPV DNA test**
- **Cobas® HPV DNA test**

Reflex Testing for Cervical Cancer (Age 30-65)

The **specificity** for cancer detection is an important criterion in **reflex** testing to avoid false-positive results. Reflex testing is intended only for women who have already tested positive for HPV for their screening test. Reflex testing for HPV genotypes 16 and 18 in combination with Pap testing helps detect the presence of HPV strains that are recognized as highly oncogenic and persistent, with the lowest clearance rates in cervical screening. HPV types 16 and 18 are associated with approximately 70% of cervical cancers.[5] The inclusion of both type HPV 18 and HPV type 45 in the genotyping test improves detection of adenocarcinoma compared to HPV type 18 alone.[6]

LabCorp offers two FDA-approved methods for HPV genotyping as a **reflex** test to HPV-positive women of any age:

- **Aptima® HPV Genotypes 16, 18/45**
- **Cobas® HPV Genotypes 16, 18**

In addition to HPV genotype testing, LabCorp also offers another reflex option for HPV-positive women; HPV E6/E7 QuantaSURE®. This test uses flow cytometry to differentiate cell types within a sample, measures the quantity of E6/E7 mRNA per cell, and calculates the percentage of cells that are overexpressing E6/E7 mRNA. The quantification of E6 and E7 in the cells helps to triage women for disease progression, helps to identify high-grade lesions, and to identify those women at increased risk for cervical disease.[7-10] The detection of E6/E7 is not just a sign of virus within the cell but evidence of viral activity. mRNA testing for E6/E7 offers an improvement in specificity and positive predictive value for transforming infections of CIN2+ disease.[7-9]

LabCorp offers one method for HPV as a **reflex** test using flow cytometry for HPV-positive women of any age:

- **HPV E6/E7 QuantaSURE®**

For test options that use the test methods discussed above, please speak with your local LabCorp representative, or visit **www.LabCorp.com** for complete test information, including specimen collection requirements.

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