

# Cervical cancer screening in less-developed areas should be tailored to local conditions

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The best approach to detecting cervical cancer in HIV-positive women living in research limited countries such as those in Sub-Saharan Africa combines commonly used testing methods tailored to local levels of development and medical infrastructure, according to a study by researchers from and the University of Witwatersrand in South Africa and the University of North Carolina.

The research evaluated the effectiveness of three commonly used screening methods– the pap smear, human papillomavirus testing (HPV) and visual inspection of the cervix with acetic acid (VIA) – among 1,202 [South African women](#) tested over a period between 2009 and 2011. Led by Cynthia Firnhaber, MD, associate professor of medicine at the University of Witwatersrand and Jennifer Smith, PhD, research associate professor at UNC and member of UNC Lineberger Cancer Center, the study findings were published by [PLOS ONE](#) on Jan. 11, 2013.

[Invasive cervical cancer](#) is the third most common cancer worldwide in women, and HIV-positive women are at an increased risk for acquiring the disease. In areas such as Africa where HIV infection has become endemic, access to health services greatly increases the chance of detection and survival. Cervical cancer, which is completely preventable, is the leading cause of [cancer death](#) in women from Sub-Saharan Africa.

In its earliest stages, invasive cervical cancer begins as pre-[cancerous lesions](#) on the cervix known as [cervical intraepithelial neoplasia](#) (CIN). Graded on a scale from 1 to 3 by severity, the lesions can take years to

progress to an [invasive cancer](#), allowing a large window for screening to be effective and benign lesions to be removed.

As stand-alone tests for high-grade CIN, HPV testing proved most sensitive with a 92 percent overall sensitivity, followed by pap smears (76 percent) and VIA (65.5 percent with nurse interpretation rising to 76 percent with physician review). However the specificity of HPV was reduced compared to [Pap smears](#) and VIA.

As each of the tests were viable for detecting cervical lesions, the study's authors determined that the decision on which to use must depend on factors such as cost, patient population, availability of skilled medical technicians and laboratory capacity. Using these factors, nations can evaluate which approach will work better for their particular setting, with some benefiting from a mixed approach in different geographical regions within a single country.

"No screening system is perfect and of course we want the best system but the definition of the best and most effective system may vary by the capacity and resources of a location. At present many women are not being screened at all in resource limited countries. We need to be flexible in our approaches to screening so we can reduce the rates of a completely preventable cancer in these countries," said Dr. Firnhaber.

Provided by University of North Carolina Health Care

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