FAST FACTS: HPV PCR IN CERVICAL CANCER SCREENING

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The goal of cervical cancer screening is to detect unsuspected cancer or precancerous lesions in asymptomatic women as early as possible, thus increasing the success rate of treatment interventions. A high prevalence of HPV and HIV co-infection is found in South Africa. This combination contributes to a more rapid rate of development of carcinoma of the cervix in HIV infected women.

Although both HPV PCR and cytology are suitable for cervical cancer screening, the current South African recommendations, as well as the WHO guidelines, recommend using HPV PCR as the primary screening method.[1,2] Screening for cervical cancer is required for women regardless of their HPV vaccination status.

The primary screening recommendations using HPV DNA PCR are summarised in Table 1.

ADVANTAGES OF HPV PCR SCREENING COMPARED TO CYTOLOGY SCREENING

- HPV PCR testing is more sensitive in detecting pre-cancerous and cancerous lesions compared to cytology (94.6% vs 55.4% for cytology
- HPV PCR testing has a better negative predictive value compared to cytology, which allows for safely lengthening the screening interval.

TABLE 1: PRIMARY SCREENING RECOMMENDATION USING HPV PCR

	General female population	HIV-positive patients
Age at initiation of screening	25-30 years of age	25 years of age
Frequency of screening	Every 5-10 years	Every 3-5 years
Positive HPV DNA screen	Can follow a screen-and-treat approach or a screen triage and treat approach	Follow a screen, triage and treat approach
Negative HPV DNA screen	Continue with regular screening	
Method of triage used	Partial genotyping, colposcopy, VIA or cytology can be used to triage women following positive HPV DNA testing	
Exit from screening	Age of 50 years after 3 consecutive negative HPV PCR tests or at 60 years if any abnormal result (SA guidelines)	

Ampath offers high-risk (hr) HPV PCR testing, which includes partial genotyping. High risk HPV types 16,18 and 45 are reported individually. The assay screens for the other high risk types (HPV 31, HPV 33, HPV 35, HPV 39, HPV 51, HPV 52, HPV 56, HPV 58, HPV 59, HPV 66, and HPV 68) as a group and further differentiates HPV types 31, 33, 45, 52/58 where relevant.

Healthcare professionals may refer patients for HPV PCR self-collection or alternatively collect the swabs in their rooms. Request HPV PCR and provide the patient with the flocculated swab and instruction leaflet if self-collection is preferred by the patient. HPV PCR can also be performed on liquid based cytology specimens in conjunction with cytology as co-testing or as reflex if indicated based on HPV PCR result.

Contact your local Ampath representative to order these consumables. Results will be released to the referring doctor within 48 hours from being received in the laboratory. Table 2 summarises the details of the HPV PCR test.

TABLE 2: THE HPV PCR TEST

	HPV PCR test
Genotyping	Individually reports high risk HPV types • HPV 16 • HPV 18 • HPV 45 Screen for the other high risk types (as a group) • HPV 31, HPV 33, HPV 35, HPV 39, HPV 51, HPV 52,HPV 56, HPV 58, HPV 59, HPV 66, and HPV 68 In cases where the screen for other high risk HPV types are positive we further differentiate the following HPV types most commonly associated with cervical cancer • HPV 31 • HPV 33 • HPV 45 • HPV 52/ 58
Specimen type	• Liquid based cytology: allows for co-testing or reflex testing based on HPV PCR result • Flocculated vaginal swab: allows for patient self-collection
Mnemonic	**HPV**
Cost	• R684* cash (***price only available until 31 Dec'26**) • Individual scheme rates apply if claimed through medical aid
Turn-around time	48 hours from receipt in testing laboratory

INTERPRETATION OF HPV PCR SCREENING TEST RESULTS

Patients can be classified into 3 different risk categories based on the results of initial HPV DNA PCR screening:

1. **Low risk**
   - HPV PCR negative

2. **Intermediate risk**
   - Positive for other high risk HPV types

3. **High risk**
   - Positive for HPV type 16, 18 or 45 (if specified in the partial genotyping assay

The further management of the different risk groups are summarised in Figure1.

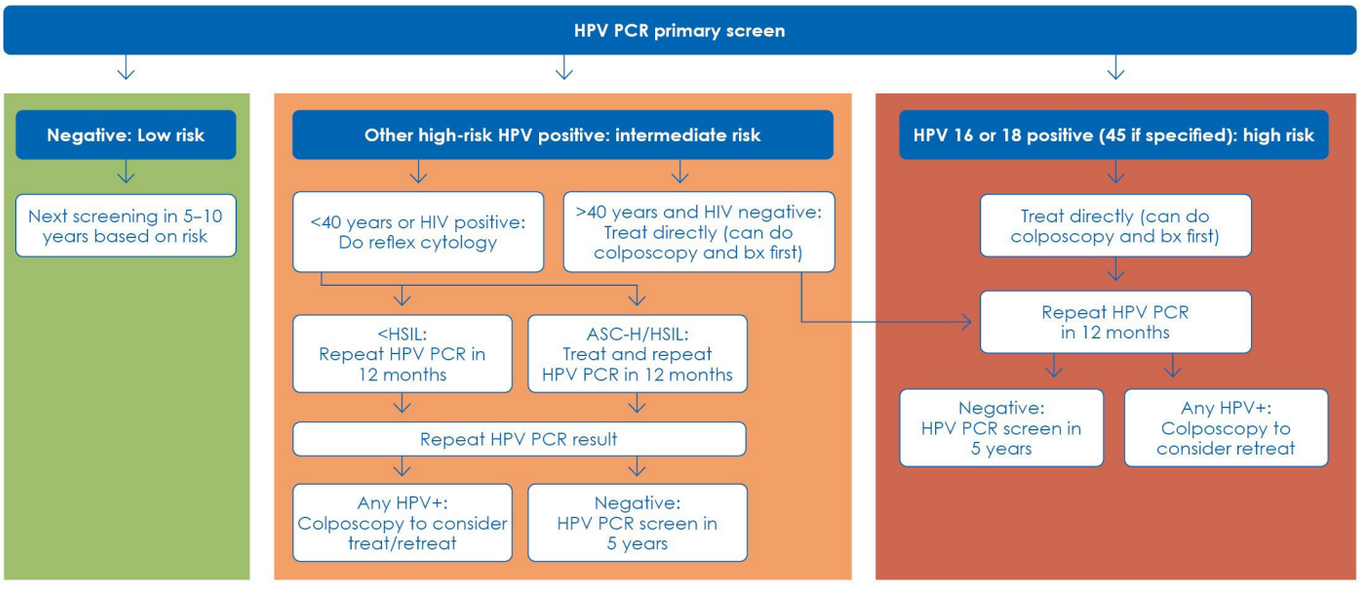

FIGURE 1: APPROACH TO THE MANAGEMENT OF HPV PCR PRIMARY SCREENING RESULTS

bx: biopsy

REFERENCES

1. Botha MH, Mabenge M, Makua M, Mbodi ML, Rogers LJ, Sebitloane M, Smith TH, Van der Merwe FH, Williamson A, Whittaker J, Dreyer G. Cervical Cancer Screening Guidelines for South Africa. African Journal of Obstetrics and Gynaecology. 2023 Sep 1;1(1):27-31.
2. World Health Organization. Cervical cancer. Last updated 5 March 2024. Available at: https:// www.who.int/news-room/fact-sheets/detail/cervical-cancer#:~:text=Prophylactic%20 vaccination%20against%20HPV%20and,early%20stage%20and%20treated%20promptly.