Human papillomavirus testing using centralized and near-Point of Care testing platforms to screen women for cervical cancer: impact of testing models on patient results return in five sub-Saharan African countries

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Background: Cervical cancer disproportionately affects women in resource-limited settings, as access to secondary prevention is limited. Observational, prospective pilot studies were conducted across 45 facilities in Malawi, Nigeria, Senegal, Uganda, and Zimbabwe between 2019 and 2021.

Methods: The pilots introduced integrated HPV testing using existing molecular platforms and compared hub near-Point-of-Care (POC), spoke near-POC, and centralized testing models. The target population was women living with HIV except in Senegal, which targeted the general population. HPV-positive women received triage with visual inspection with acetic acid (VIA), treatment, or referral based on national policy.

Results: Across the five countries, 15,776 women were screened and tested for HPV,14,564 (92%) had valid results and 4,710/14,564 (32%) were HPV-positive. 7,262 valid results were conducted at hub sites, 906 at spoke sites, and 6,396 at centralized testing sites.

Median turnaround time (TAT) from sample collection to patient receipt at hubs was 9 days [interquartile range (IQR) 2-43]. 11 days at spokes (6-38), and 56 days (39-91) at centralized sites (p<0.001). 11% of women at hubs received results on the same-day as sample collection relative to 0% at spokes and centralized sites (P=0.091). At 30 days, 48% of results were returned to women tested at hubs,49% at spokes and 9% at centralized sites (p=0.003), while at 90 days proportions increased to 64%, 59%, and 49%, respectively (P=0.380). By, 180 days, results returned to women tested at hubs increased to 72%, compared to 63% at spokes and 67% at centralized sites (p=0.587).

Conclusion: Despite near-POC hub testing getting results back to women quicker, by 180 days there was no significant difference in the proportion of women receiving their results compared to centralized testing. With proper systems in place, use of centralized or near-POC HPV testing for cervical cancer screening program as recommended by WHO can be a promising model in Sub-Saharan Africa.

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