# INTRODUCTION OF PRIMARY HPV TESTING FOR ROUTINE CERVICAL SCREENING IN GHANA - THE BATTOR EXPERIENCE

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## Introduction & Background

Worldwide over 260,000 women die from cervical cancer annually, mostly in low resource settings including Ghana. Countries that have invested in organised screening programmes have successfully reduced the incidence of cervical cancer. Sporadic pap smears and Visual Inspection with Acetic acid (VIA) have been used in Ghana for cervical screening. With no cytologists in rural communities, screening models like HPV DNA testing combined with self-sampling can reach out to more women.

## Methods

In June 2016, QIAGEN's careHPV system was set up in Catholic Hospital, Battor, Ghana with training of the laboratory staff. Primary screening with HPV DNA testing replaced primary screening with cytology at the Gynaecology Clinic for women 30+ years. Women have their samples taken by nurses or collect the samples themselves. The samples are then tested for high risk HPV using the careHPV system. Test positives are followed up using a local algorithm. Cervical screening is not covered by Ghana's National Health Insurance Scheme, so women pay for screening services by themselves.

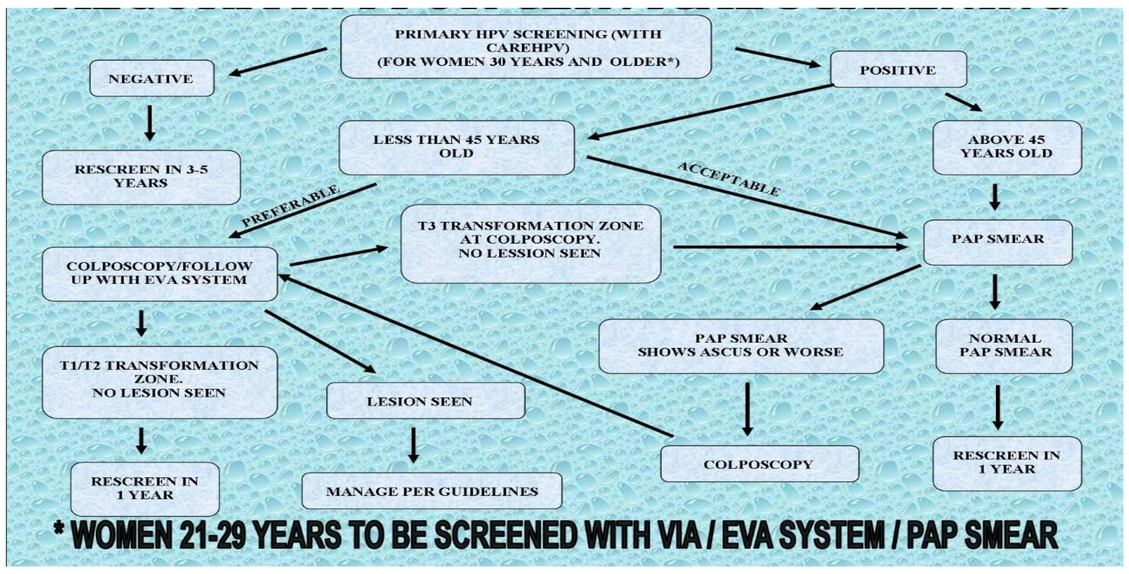


**Fig. 1: Battor Algorithm for Cervical Cancer Screening**

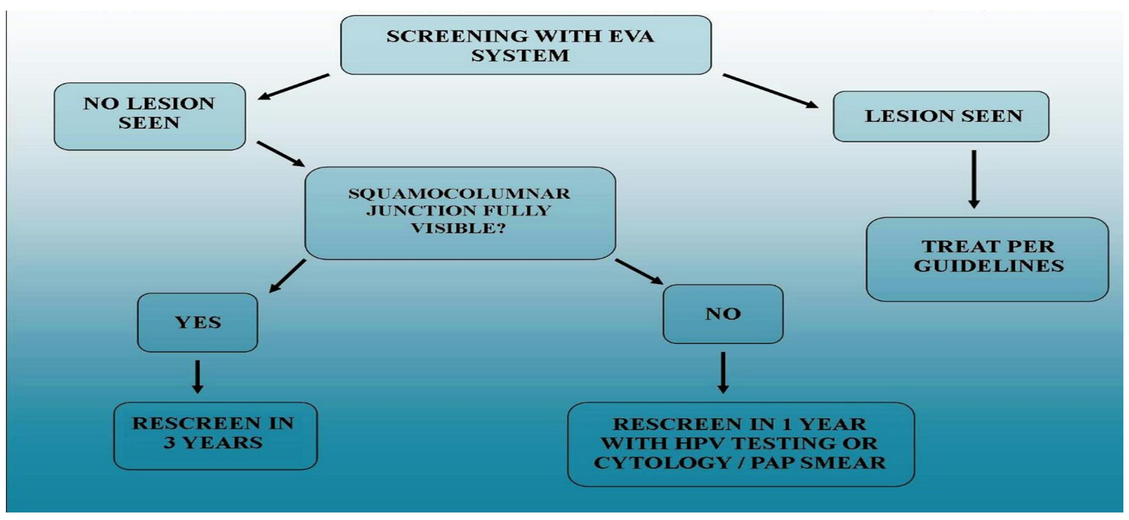


**Fig. 2: Battor Algorithm for Cervical Cancer Screening and Follow Up of HPV Positives Using the EVA System**

## Acknowledgement

**We thank all our colleagues involved in and supporting this clinical project at the Catholic Hospital Battor, Ghana**

## Results

In all 230 women are included in the current study. Their average age is 39.8 years and approximately 60% (138) are currently married. 34.4% (73) of the women are nulliparous.

In the first three runs in the laboratory, which had the 230 women included in this study, 33 out of 230 (14.3%) women tested positive for high risk HPV. Positives are followed up with cytology or directly with colposcopy/EVA system as shown in the algorithm. For the cytology group, those with ASCUS or worse are referred for colposcopy.

| Demographic and Clinical Characteristics | Study Sample (n=230) | High Risk HPV Positives (n=33) |
|---|---|---|
| Age, years (Mean, SD) | 39.8 (7.7) | 36.8 (7.1) |
| Marital status (%, n) | | |
| Married | 60.0 (138) | 42.4 (14) |
| Single | 10.4 (24) | 18.2 (6) |
| Divorced | 8.7 (20) | 12.1 (4) |
| Unmarried (Living with partner) | 2.6 (6) | 0.0 (0) |
| In relationship (Not living with partner) | 11.3 (26) | 21.2 (7) |
| Widowed | 6.1 (14) | 6.1 (2) |
| Parity | | |
| 0 | 34.4 (73) | 51.6 (16) |
| 1 | 20.8 (44) | 22.6 (7) |
| 2 | 18.4 (39) | 16.1 (5) |
| 3 | 13.7 (29) | 9.7 (3) |
| 4+ | 11.7 (27) | 0.0 (0) |
| High risk HPV among previously screened (%, n)* | 10.4 (5) | 3.0 (1) |
| High risk HPV among screened in study (%, n) | 14.3 (33) | Not applicable |

***n=59 women in the sample were previously screened***

**Table 1: Summary of key characteristics of screened women**

## Discussion & Conclusion

From our experience, routine primary cervical screening with HPV DNA testing is feasible in decentralised centres (district hospitals) in Ghana.

Follow up of screen positives in our setting is by a combination of cytology, standard colposcopy and the use of the EVA (Enhanced Visual Assessment) system, a visual inspection device built around a mobile phone platform that gives colposcopy-grade imaging and allows follow up to be done in communities.

HPV DNA testing combined with self sampling and mobile colposcopy brings cervical screening to the doorsteps of women and offers an opportunity to reach out to more women in Ghana especially in rural areas.