

## **ABSTRACT**

### **Background**

Accurate and early diagnosis of HIV-syphilis dual infection has far reaching impact towards the prevention of mother-to-child transmission (EMTCT). This requires invention and use of simple to use, rapid, cost effective and high performance assays. Both HIV and syphilis being sexually transmitted diseases share common mode of transmission because of which simultaneous screening for both reinforces the control strategy of one by the other. Whereas the HIV/syphilis SD Bioline duo kit possess the much desired impacts, their efficiency and dependability in performance quality is not established as very few studies have assessed their diagnostic performance. This study evaluated the diagnostic performance of the HIV/syphilis SD Bioline duo kit among pregnant women attending Mayuge Health Center III antenatal care clinic.

### **Materials and methods**

A cross-sectional was conducted among pregnant women aged 18 years and above attending the antenatal care unit at Mayuge Health Center III. Two milliliters of venous blood were collected into Ethylene di-amine tetra acetic acid (EDTA) tubes, and their HIV and/or syphilis sore-status were determined using the HIV and syphilis testing algorithms and SD Bioline duo kit. Sensitivity and specificity were calculated to assess the performance of the test kits and PCR was used as a Gold standard test for the dual infection.

### **Results**

The study enrolled 382 participants; their mean age was 25.8 years (range, 18 to 43). Majority 73.1% (N=279) were in a stable relationship, of which 65.7% (N=251) reportedly had one partner for marriage. The prevalence of HIV was found at 1.8% (95% confidence interval: 1.23-2.41); while that of syphilis was 2.1% (95% confidence interval: 1.61-2.54). The sensitivity and specificity of the SD Bioline duo kit for HIV and syphilis infections were all found to be 100.0%.

### **Conclusion**

The SD BIOLINE HIV/syphilis duo test performed well, a feature which may enhance integration of syphilis testing and treatment to harness the dual HIV and syphilis elimination goal. This coupled with a shortened turn-around time of 20 minutes makes it fits into resource-limited and very busy rural settings where most of people reside.