High burden of sexually transmitted infections and poor diagnostic performance of syndromic approaches within a decentralized HIV care setting in Eswatini.

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INTRODUCTION

- Globally, sexually transmitted infections (STIs) are a major public health threat with an estimated 376 million new infections acquired worldwide in 2016*.
- STIs can either be symptomatic or asymptomatic and have serious consequences if not treated.
- The syndromic approach is used for diagnosis and treatment of STIs in Eswatini which could potentially propagate antimicrobial resistance.
- Partner notification services are an integral part of quality STI care to avoid re-infections through untreated partners and stop the spread of infections*.

Objectives:

1. To estimate the prevalence of asymptomatic and symptomatic (bacterial, parasitic and viral) STIs in the Shiselweni region of Eswatini
2. To evaluate performance of the syndromic approach for STI diagnosis.

Ethical clearance was provided by the MSF and Eswatini study review boards.

METHODS

- **A cross-sectional sample** of patients accessing routine HIV testing and ART care services tested for STIs : *Neisseria gonorrhoeae* (NG), *Treponema pallidum* (TP), *Trichomonas vaginalis* (TV) *Chlamydia trachomatis* (CT) and *Mycoplasma genitalium* (MG)
- **Laboratory**
  - First-catch urine specimens were used on the Xpert assays for the simultaneous detection of **CT/NG, TV** and **MG**
  - Vaginal/rectal self-collected swabs were used on the Xpert assay for NAAT testing to detect **HPV**
  - Blood samples were tested for **TP, HBV** and **HCV** infection using standard RDTs
- Antimicrobial treatment according to international guidelines**

Study setting

Shiselweni region: ~210,000 inhabitants

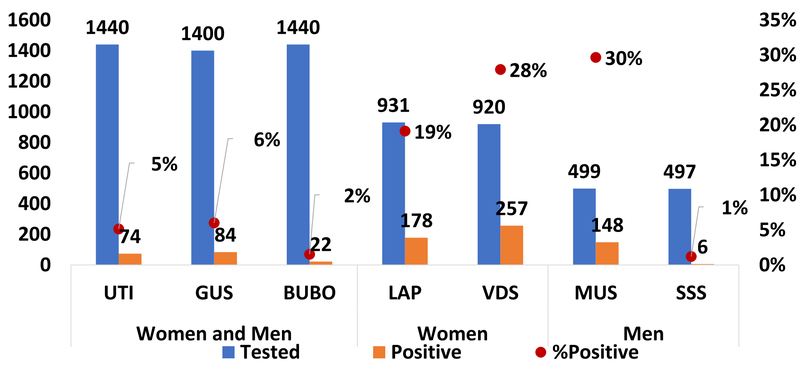
Population:

- Many young people (aged 18-30 years)
- Factory workers
- Long distance truck drivers
- Female sex workers (FSW)
- Men who have sex with men (MSM)

Challenges: High HIV/Bacterial STI burden, concurrent sexual partnerships, gender-based violence (GBV), syndromic approach to STI care

RESULTS

Figure 1: Syndromic diagnosis (as diagnosed by clinician)



LAP: Lower abdominal pain, GUS: Genital ulcer syndrome , MUS: Male ureteral syndrome, SSS: Scrotal swelling syndrome
UTI: Urinary tract infection, VDS: Vaginal discharge syndrome, BUBO: Inguinal bubo

Leading syndromic diagnoses were Male urethral syndrome (**MUS)** followed by Vaginal discharge syndrome (**VDS)**

Figure 2: Combined STIs (NG, CT, TV) by age & gender

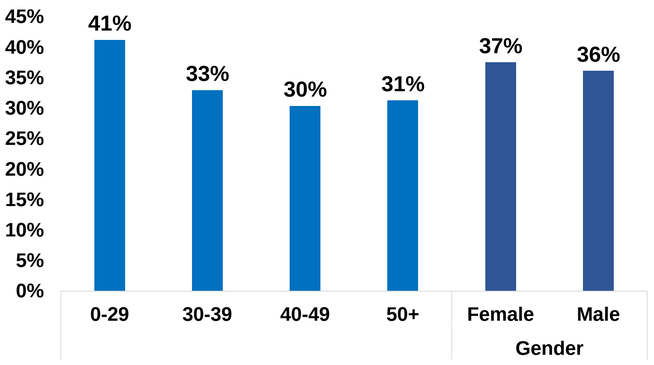
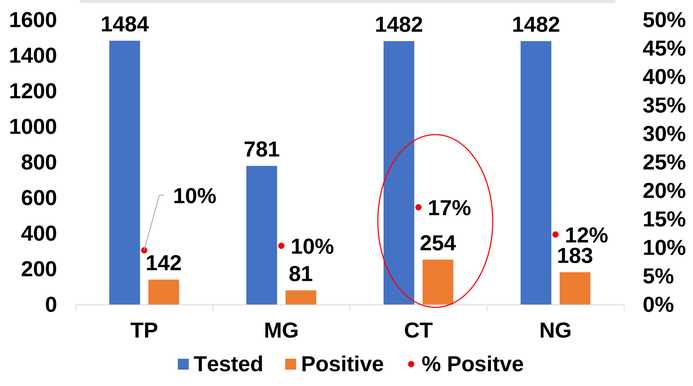
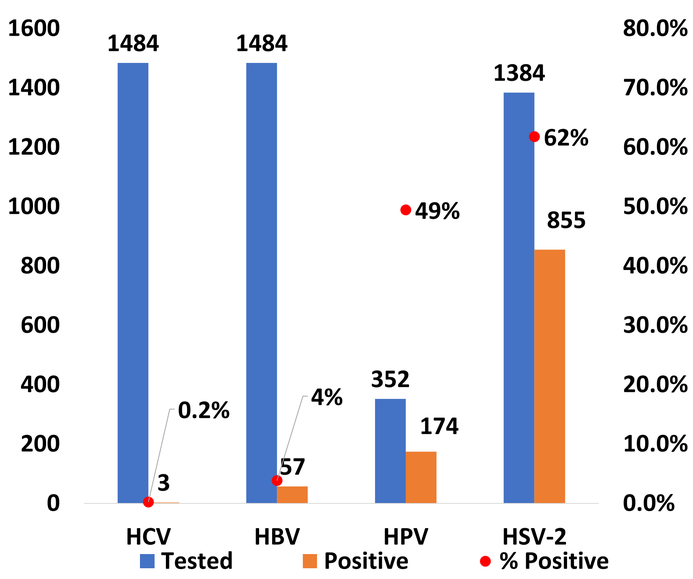


Figure 3: Distribution of bacterial /parasitic STIs



- **1484** patients enrolled
- **549 (37%)** had STI symptoms
- **20%** were PLHIV (HIV+)
- **65%** were women.
- **29 years** - Median age (IQR 23-36) years, youngest: 18 years & oldest: 70 years
- Combined STIs were most prevalent among the 18-29 age-group
- No significant difference between females and males
- Chlamydia was most prevalent

Figure 4: Distribution of viral STIs



Viral STIs

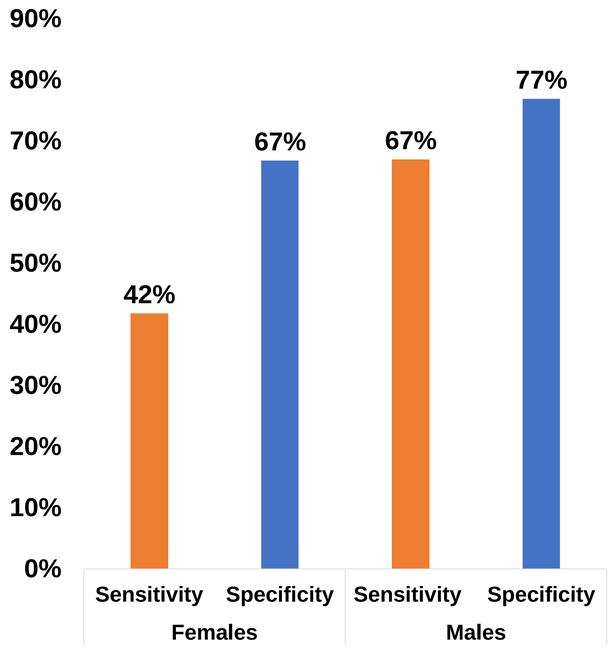
0.2% (n=3) hepatitis C (HCV) infection

4% (n=57) hepatitis B **(**HBV) infection

352 tested for human papilloma virus (HPV) 174 (49%) +ve

855 tested positive for herpes simplex virus type 2

Figure 5: Diagnostic performance of the syndromic approach



Comparing syndromic diagnosis and laboratory diagnosis

- **Mis-diagnosis was high** for MUS and VDS
- **Diagnostic performance was lower for women**

❖ Patients with a **false-positive** diagnosis were more likely to receive antibiotics that were not needed

❖ Patients with a **false-negative** diagnosis were likely to not receive treatment despite need

CONCLUSION

High burden of STIs in Eswatini and the poor diagnostic ability of the syndromic approach in this setting calls for new approaches.

References: *WHO, https://www.who.int/news-room/fact-sheets/detail/sexually-transmitted-infections-(stis)
**"Guidelines for antimicrobial utilization in health care facilities.," Can. J. Infect. Dis. = J. Can. des Mal. Infect., vol. 1, no. 2, pp. 64–70, 1990, doi: 10.1155/1990/216712.