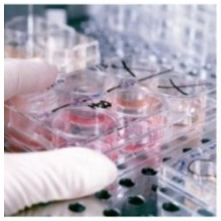
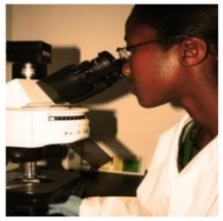
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service


Microbiological Surveillance of Sexually Transmitted Syndromes in South Africa (2004 -2014)

Frans Radebe
Centre for HIV & STIs, National Institute For Communicable Diseases, National Health Laboratory Services.
03 .12.2014

NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

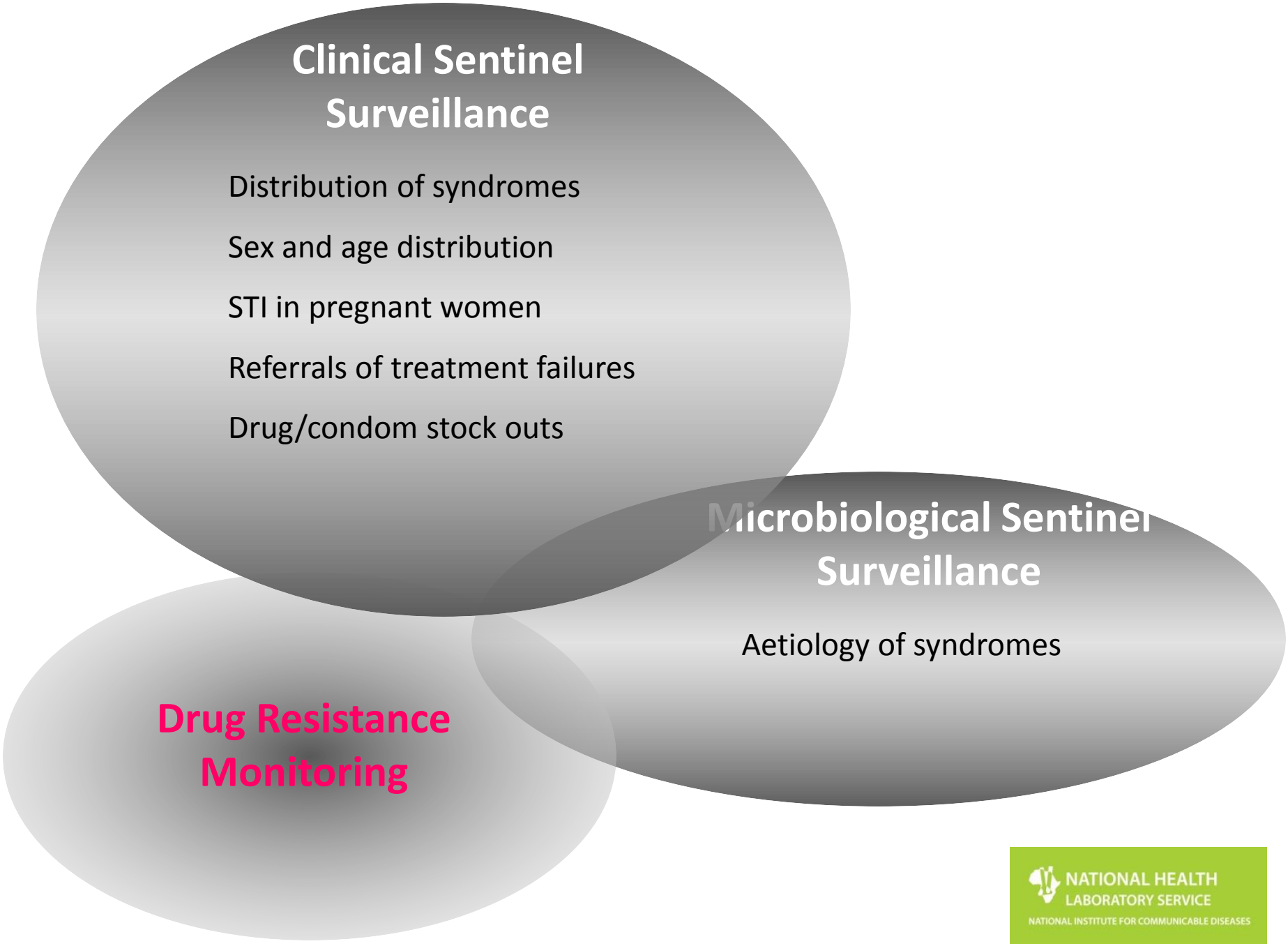
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

The Components of the National Comprehensive Surveillance System

- The National Indicators Data Set (NIDS) which contain 5 data elements on STIs and are collected from all primary health care (PHC) facilities and level-one hospitals in the country.

- The National Clinical Sentinel Surveillance (NCSS) programme under which detailed data are collected from a selected number of PHCs in the country

- The National Microbiological Surveillance (NMS) programme, which is composed of periodic surveys of syndrome aetiology and drug resistance monitoring.



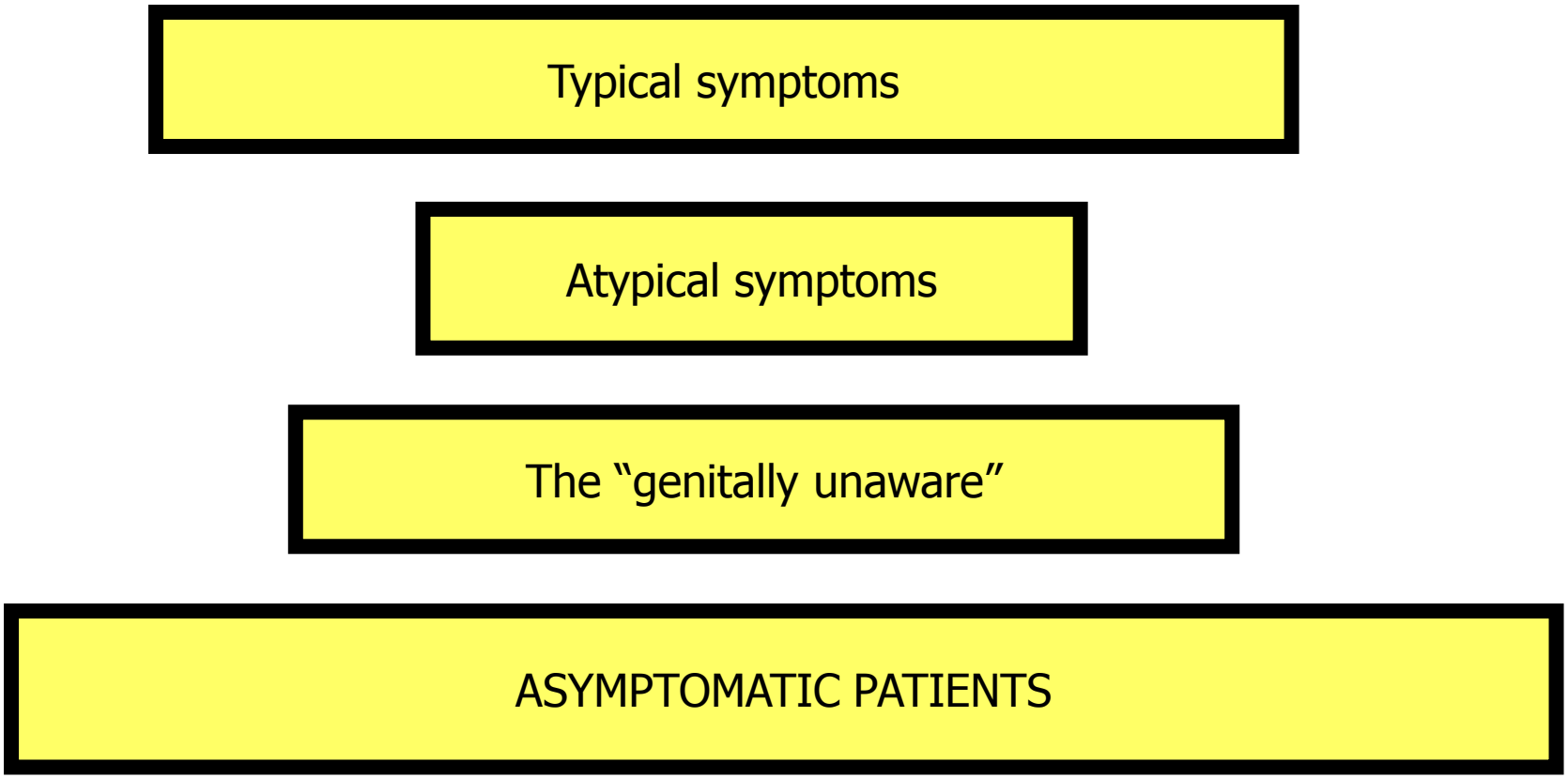
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Key Players for the Programmes

- National Department of Health
- Provincial Department of Health
- CHIV & STIs (co-ordination)
- Collaborating Universities
- National Health Laboratory Service

NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Clinical Spectrum of STIs



Presentations of Sexually Transmitted Infections

- Urethral discharge (Men)

- Vaginal Discharge

- Genital Ulcer Disease
- Genital Warts

NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

The Syndromic Management

- A syndrome is a collection of consistent groups of symptoms and easily recognised signs.

- The syndromic management approach for STIs provides treatment that will deal with the majority of, or the most serious, organisms for producing a syndrome.

- STI syndromic management is advocated by the WHO as the most cost-effective means of treating STIs in resource-poor settings.

The Case Management package

History taking (including recent sexual history)

Clinical examination (speculum for females)

Making one or more correct syndrome diagnoses

Early and effective treatment - flowcharts

Advice on sexual behaviour

Promotion/provision of condoms

Partner notification and treatment

Case reporting

Clinical follow-up as appropriate

Patient Issues

Protocol approved by South African Department of Health

Ethics approval from the HREC (Medical) at the University of the Witwatersrand & Provincial Ethics' Committees

Informed written consent

Anonymous testing

Patients managed syndromically

3-4 months' collection period (now STI Aetiology Survey + Germs –SA)

NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Goals and Objectives of Survey

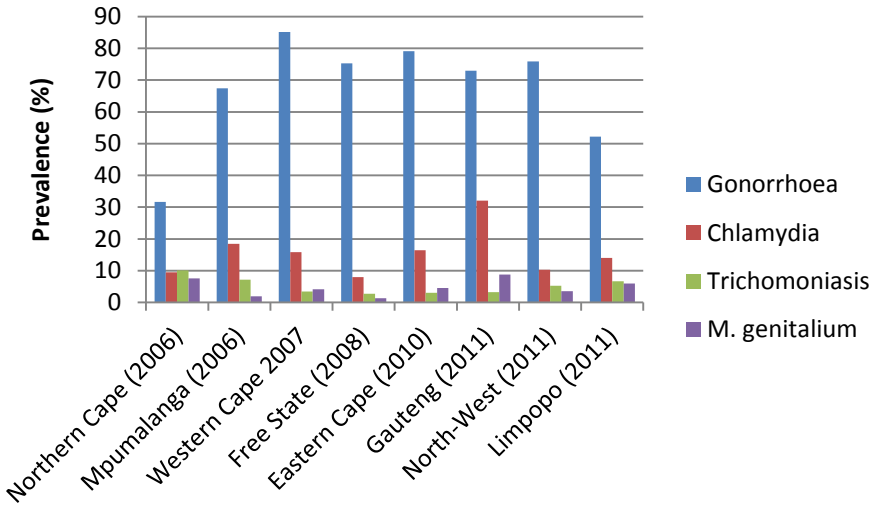
As part of national microbiology surveillance of sexually transmitted infections (STIs), which was launched in 2004,laboratory based STI surveillance was undertaken in 9 provinces of SA

The objectives of the survey were to determine:

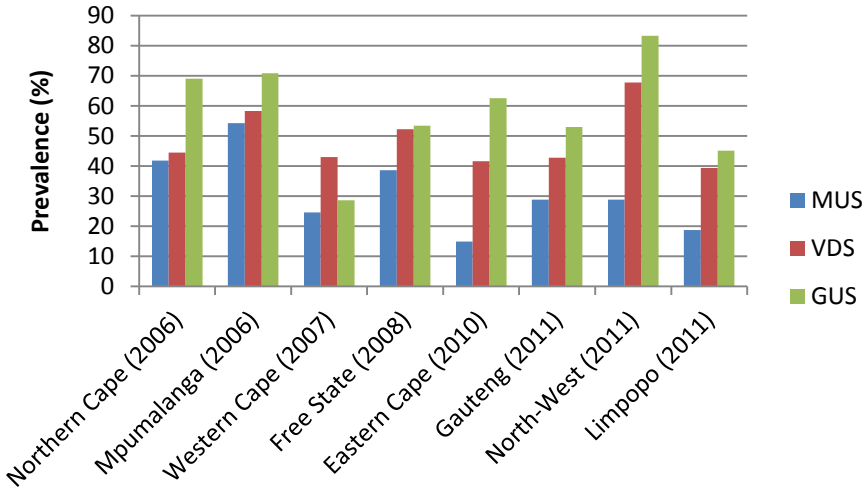
- The aetiologies of three main syndromes (GUD, VDS and MUS)
- The sero-prevalence of syphilis, HSV-2 and HIV
- The antimicrobial susceptibility profile of cultured gonococci

NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

STI aetiological surveillance



Prevalence of STI pathogens in MUS patients by province



Prevalence of HIV-1 co-infection by STI syndrome and province

- Measure the **relative prevalence of STI pathogens and conditions** for the three most important STI syndromes

  Male urethral/vaginal discharge STI pathogens:

  N. gonorrhoeae — *T. vaginalis*
  C. trachomatis — *M. genitalium*

  Vaginal discharge non-STI conditions:

  bacterial vaginosis — candidiasis

  Genital ulceration STI pathogens:

  Herpes simplex virus — *T. pallidum*
  H. ducreyi — *C. trachomatis* L1-L3
  K. granulomatis

- Measure **co-infection sero-prevalence** (syphilis, HSV-2,HIV-1) in STI patients

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

Patient Specimens

Serum from all patients

HIV, RPR, HSV-2 antibodies

Swabs from genital ulcers

ulcer smear for granuloma inguinale
ulcer swab for NAATs

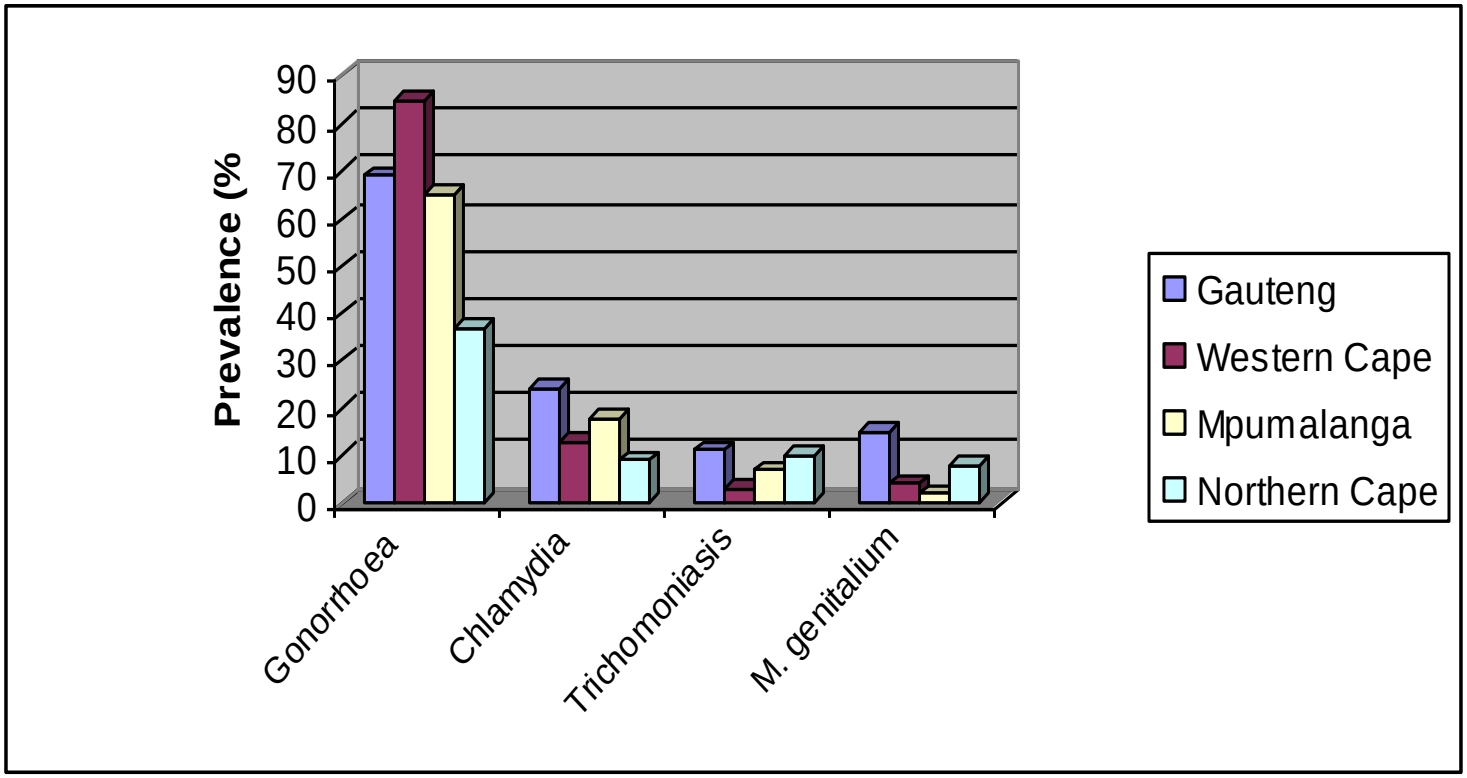
Male urethritis syndrome

endourethral culture for gonococci
endourethral swab/urine for NAATs

Vaginal discharges

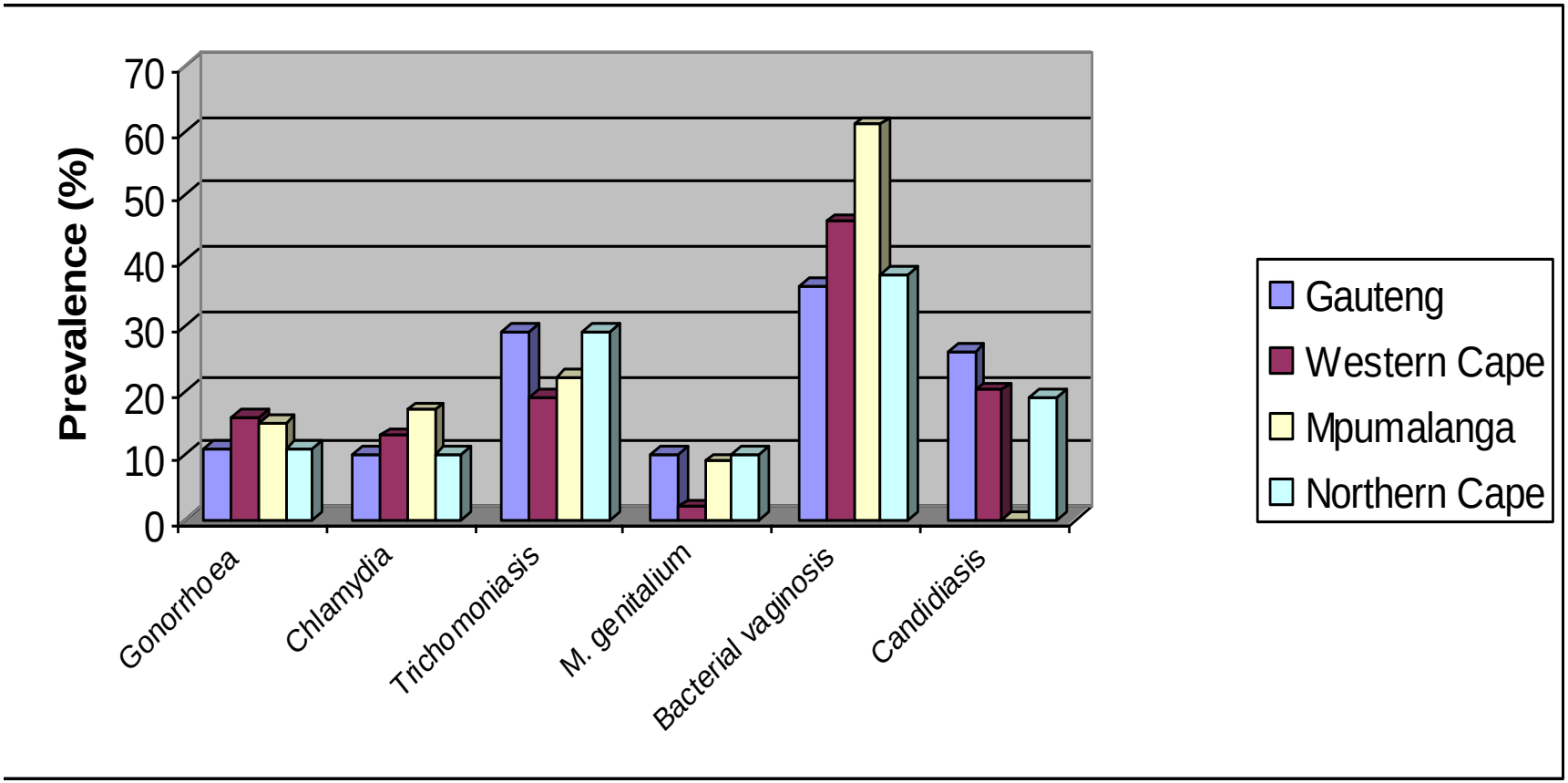
high vaginal swab for slide
endocervical swab for NAATs

Aetiology of MUS by Diagnosis (2006-2007 Surveys)



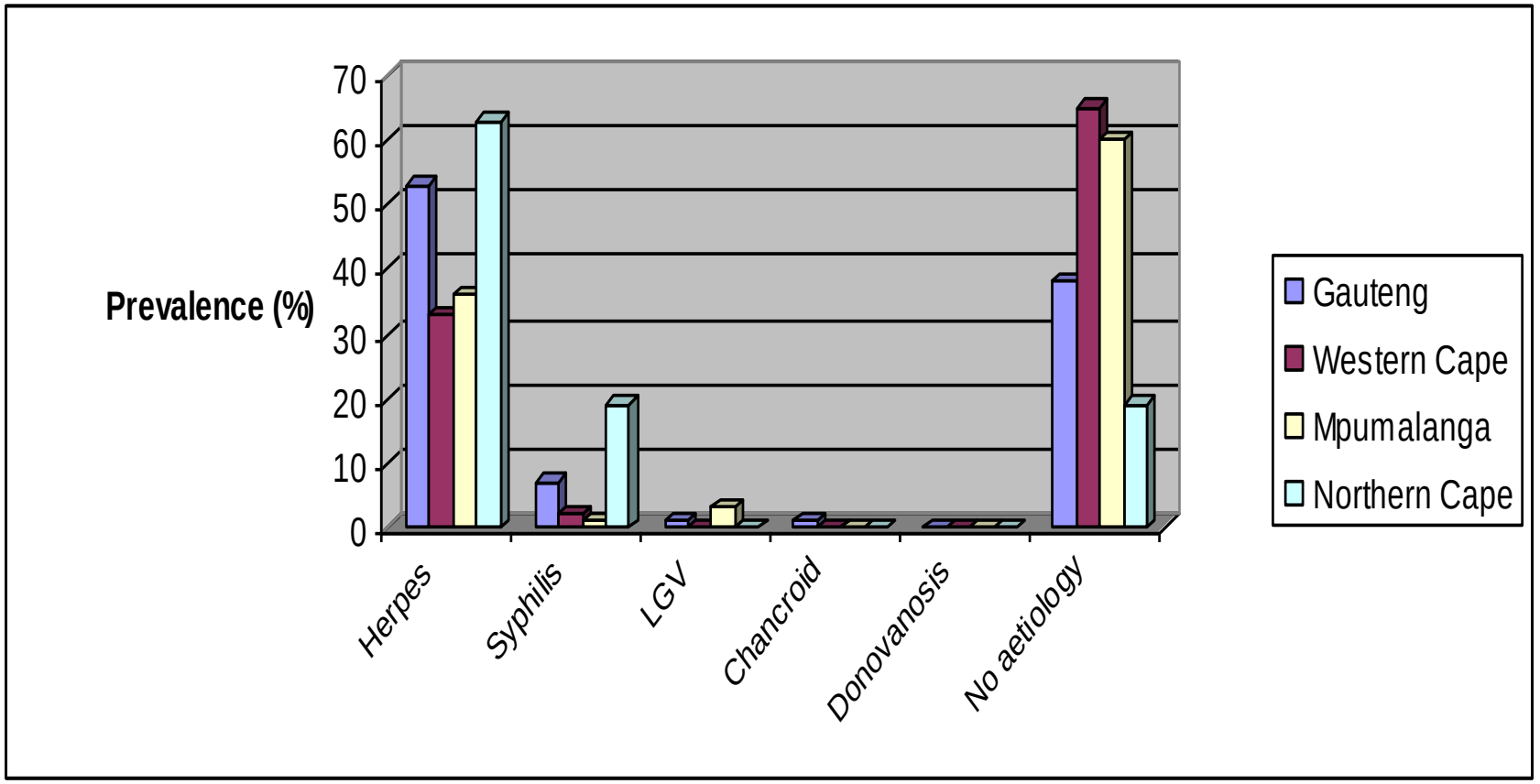
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology of VDS by Diagnosis (2006-2007 Surveys)



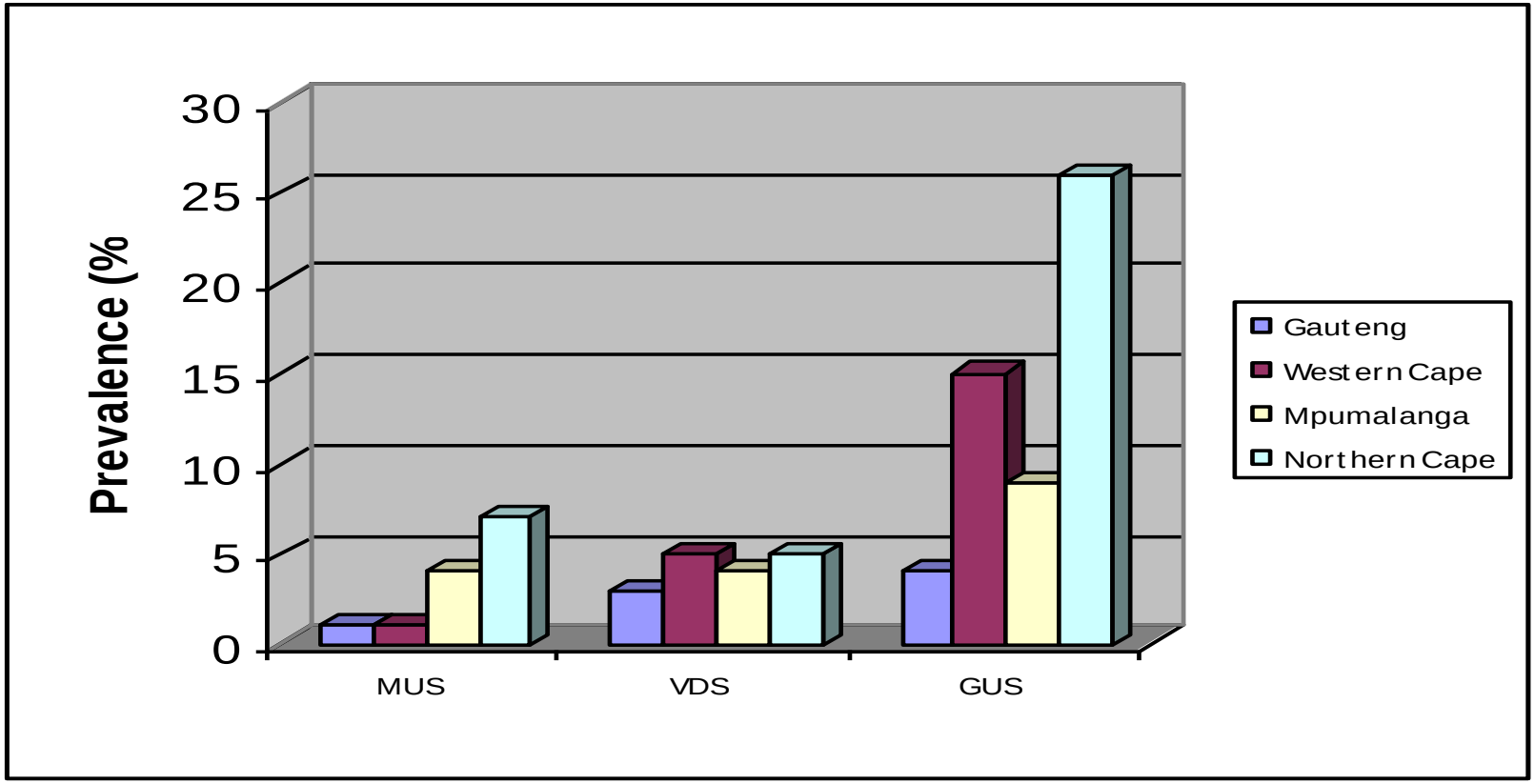
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology of GUD by Diagnosis (2006-2007 Surveys)



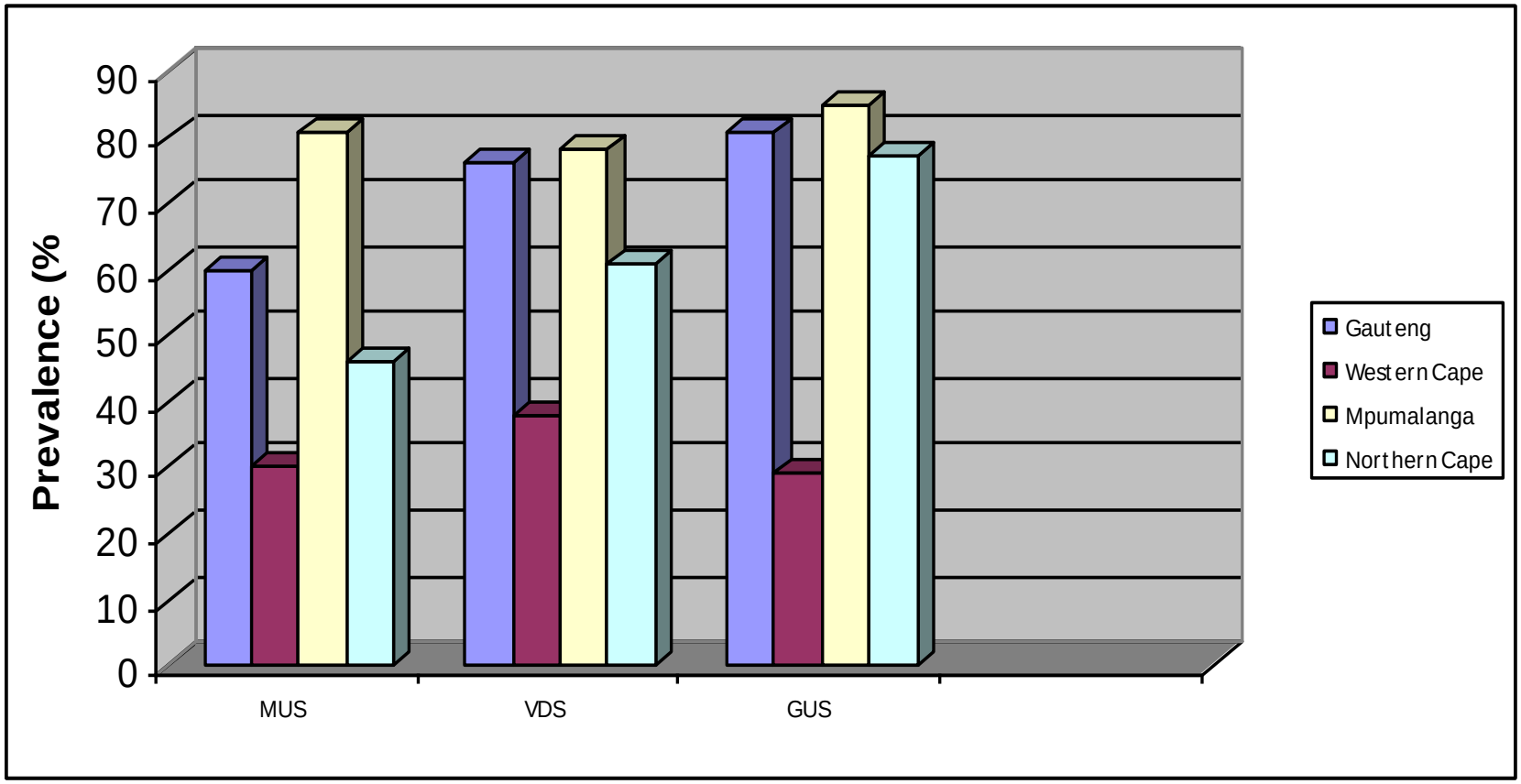
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Sero-prevalence of RPR (≥ 1:4) by Syndrome (2006-2007 Surveys)



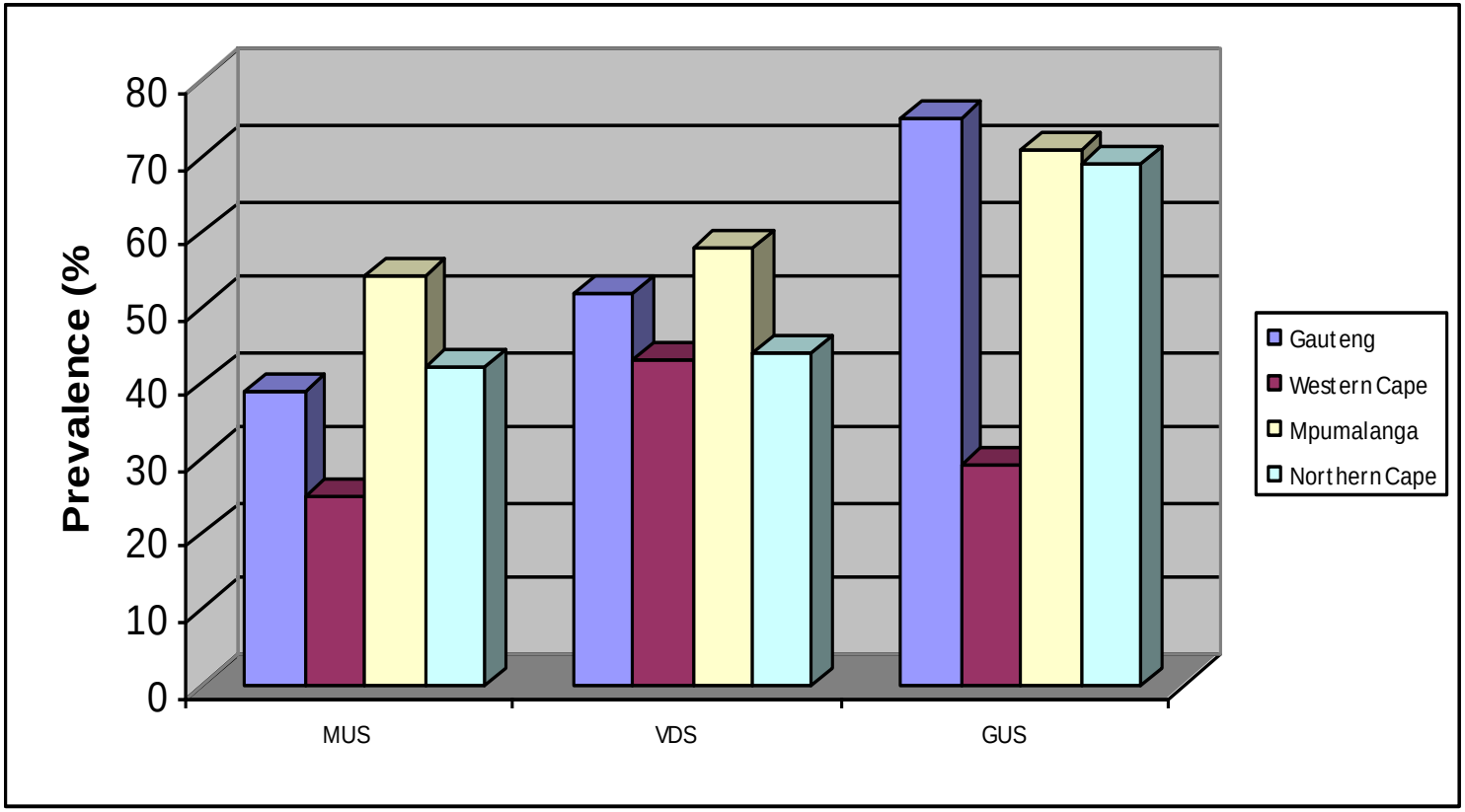
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Sero-prevalence of HSV-2 by Syndrome (2006-2007 Surveys)



NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Sero-prevalence of HIV by Syndrome (2006-2007 Surveys)



NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology for MUS, VDS and GUS in Free State Province 2008

	NG %	CT %	TV %	Mg %	TP %	HSV %	HD %	LGV %	GI %
MUS	75.3	8.0	2.7	1.3	-	-	-	-	-
VDS	16.1	11.4	25.5	3.4	-	-	-	-	-
GUS	-	-	-	-	19.0	34.9	1.6	3.2	0

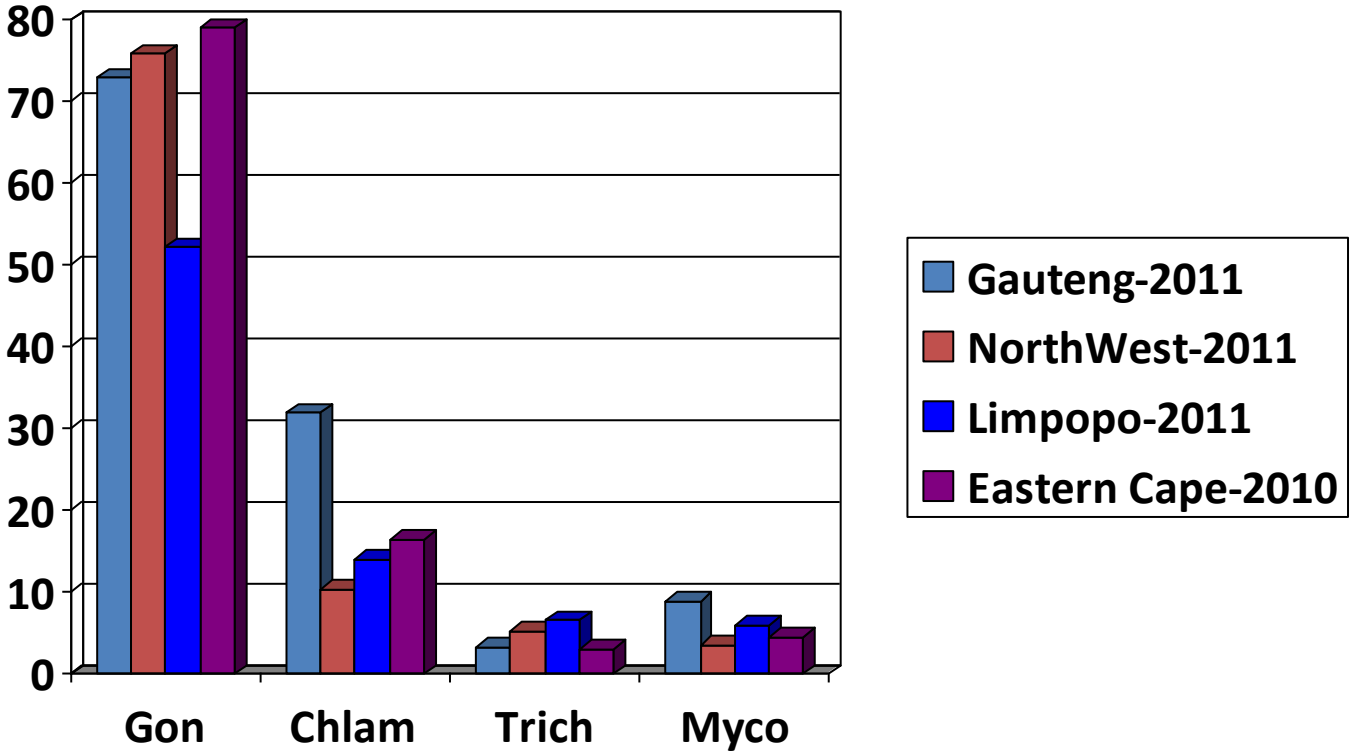
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

HIV, HSV-2 and RPR Sero-Prevalence for MUS, VDS and GUS in Free State province 2008

	HIV %	HSV-2 %	RPR %	RPR>4 %
MUS	38.6	55.0	7.1	6.5
VDS	53.4	71.9	3.7	3.0
GUS	53.4	62.1	13.8	10.5

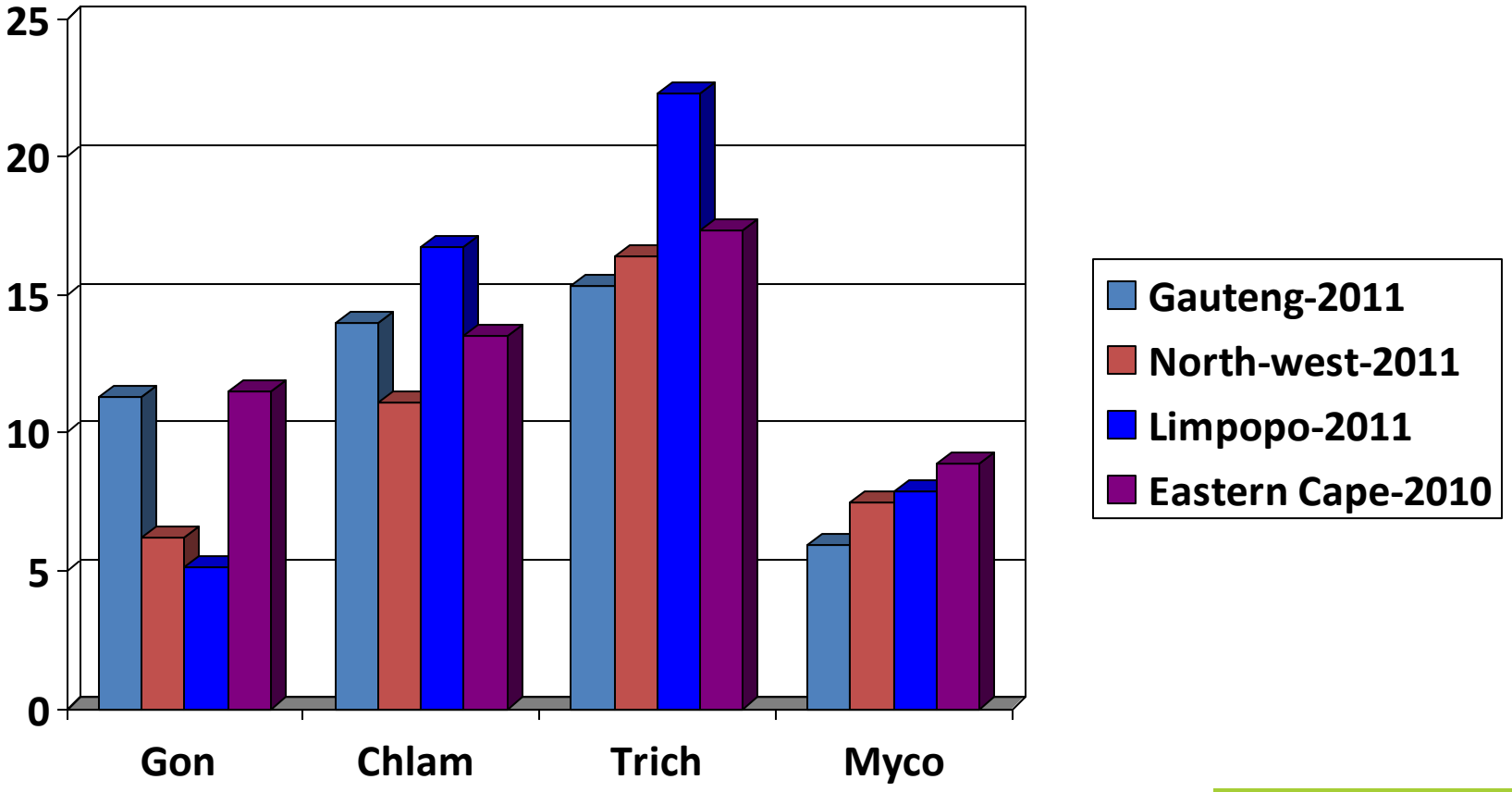
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology of MUS by M-PCR



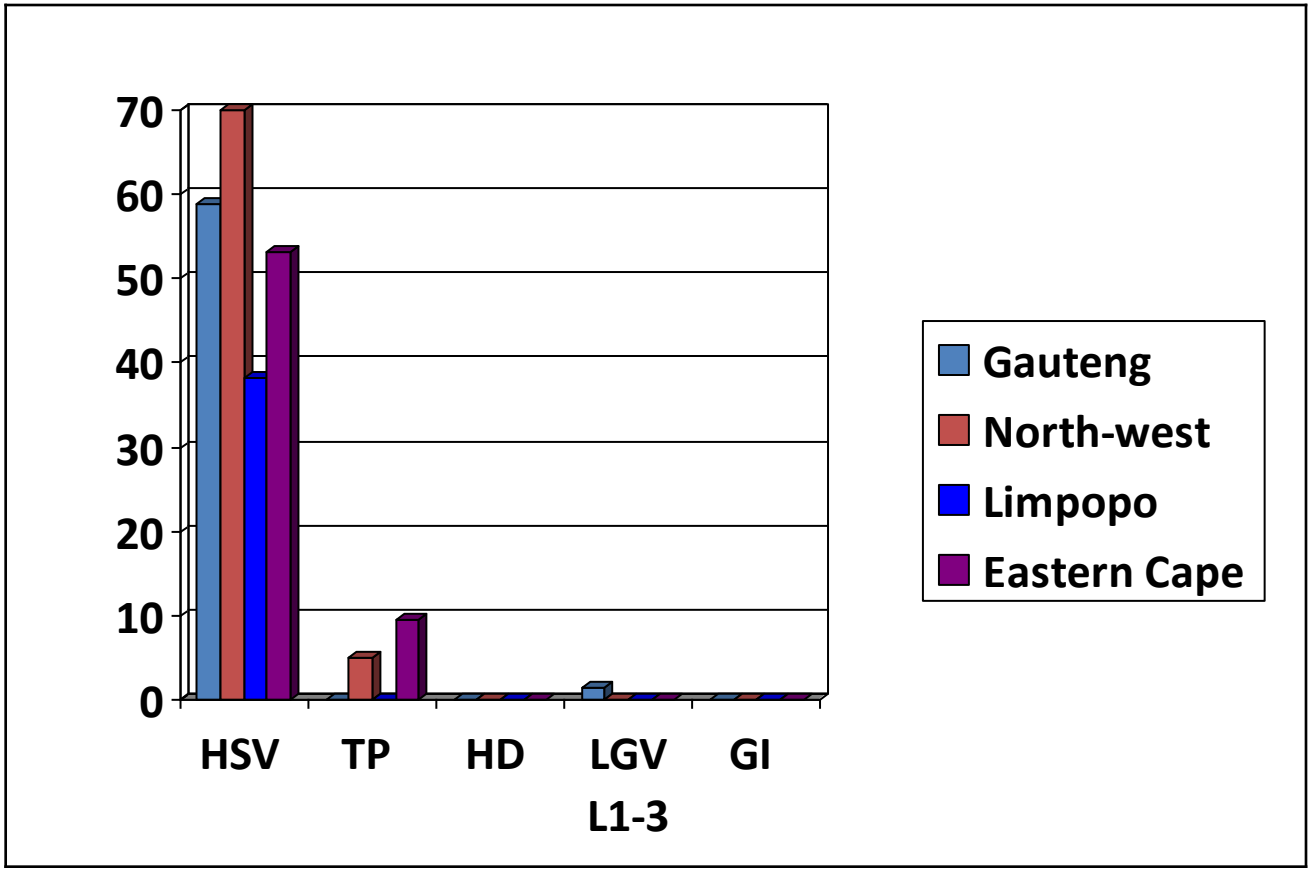
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology of VDS by M-PCR



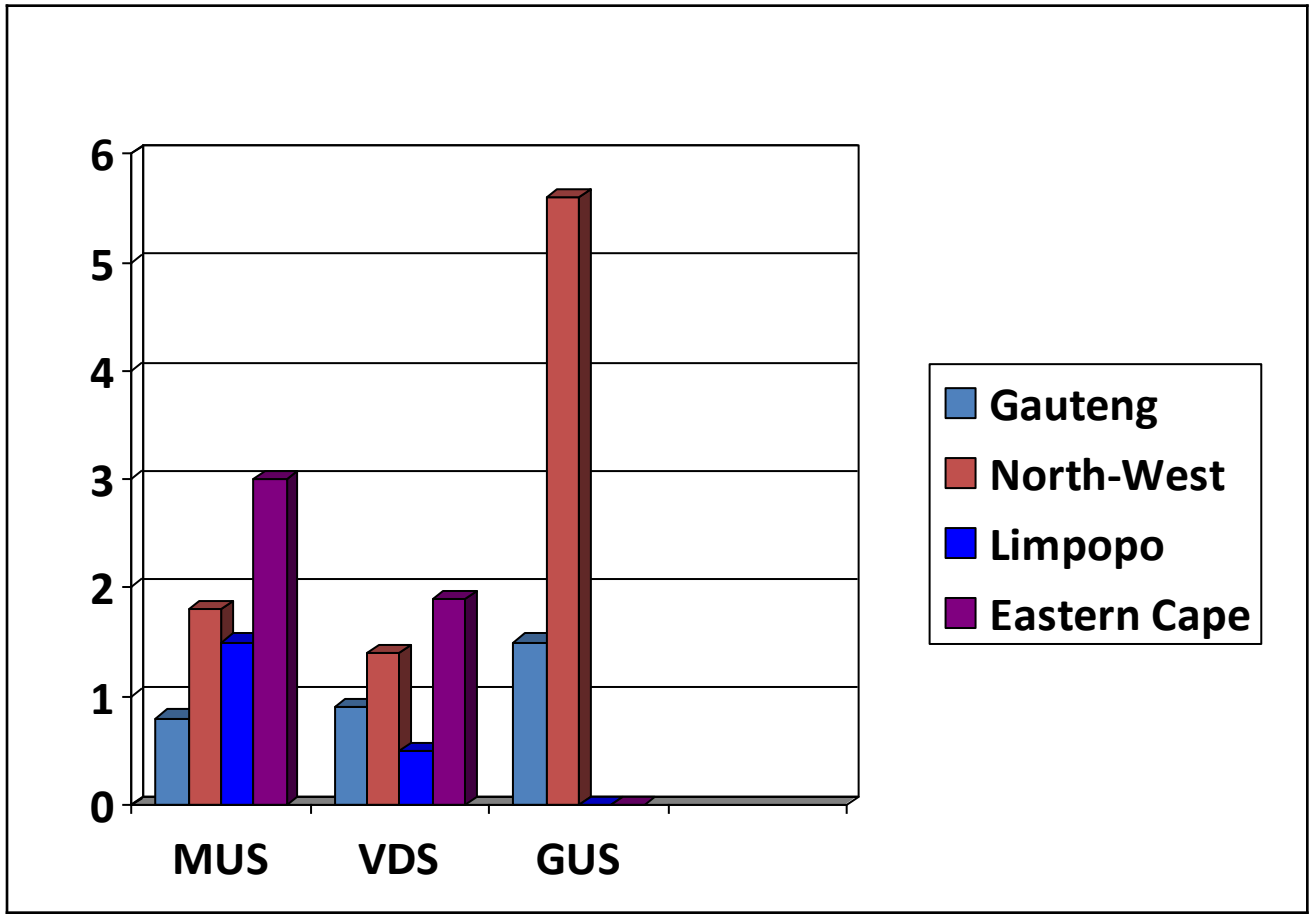
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology of GUS by M-PCR (2010-11)



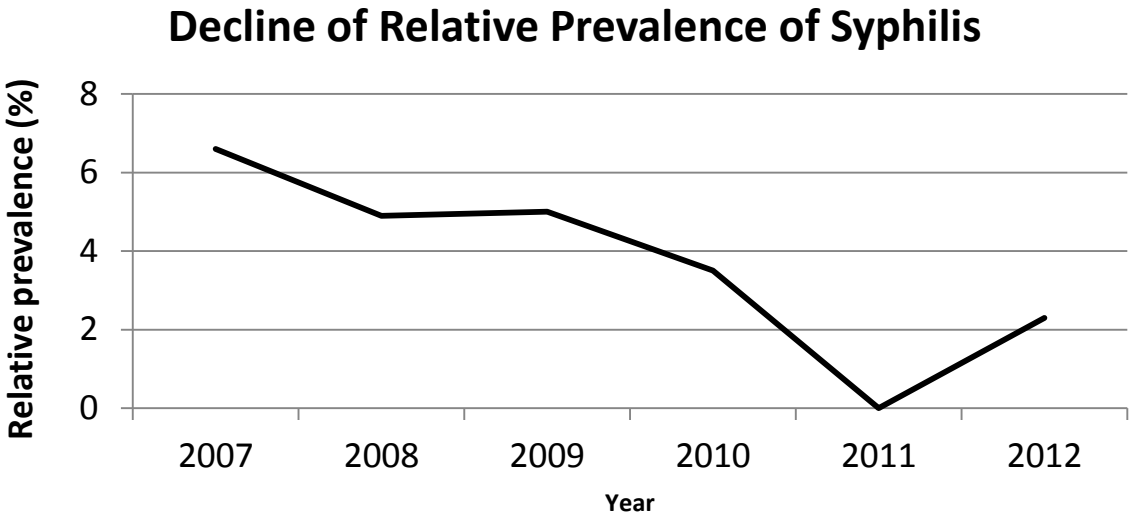
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

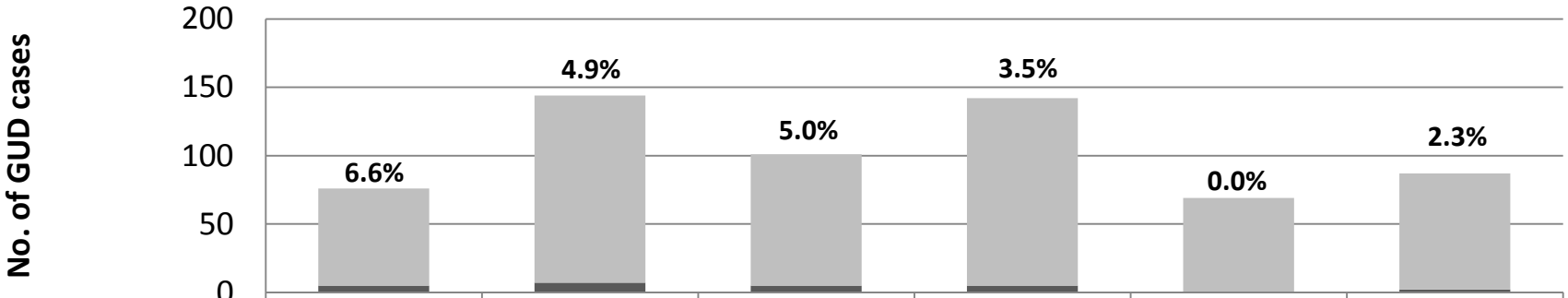
Sero-prevalence of RPR (≥1:4) by Syndrome (2010-11)



NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Syphilis Trends among Genital Ulcer Patients Alexandra Health Centre, Gauteng (2007-12)



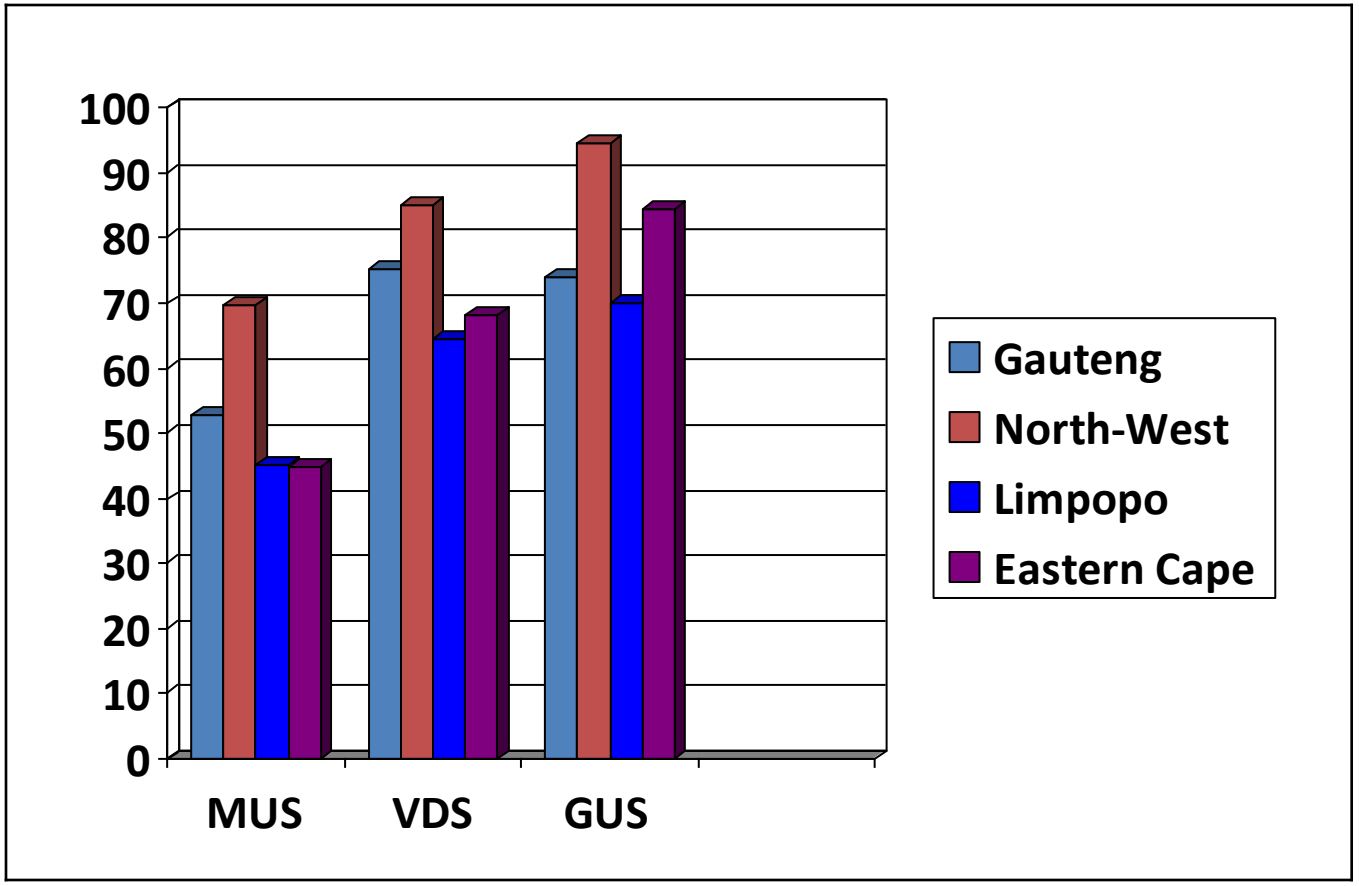


	2007	2008	2009	2010	2011	2012
T. pallidum -ve	71	137	96	137	69	85
T. pallidum +ve	5	7	5	5	0	2

Source: Centre for HIV and STIs, NICD/NHLS

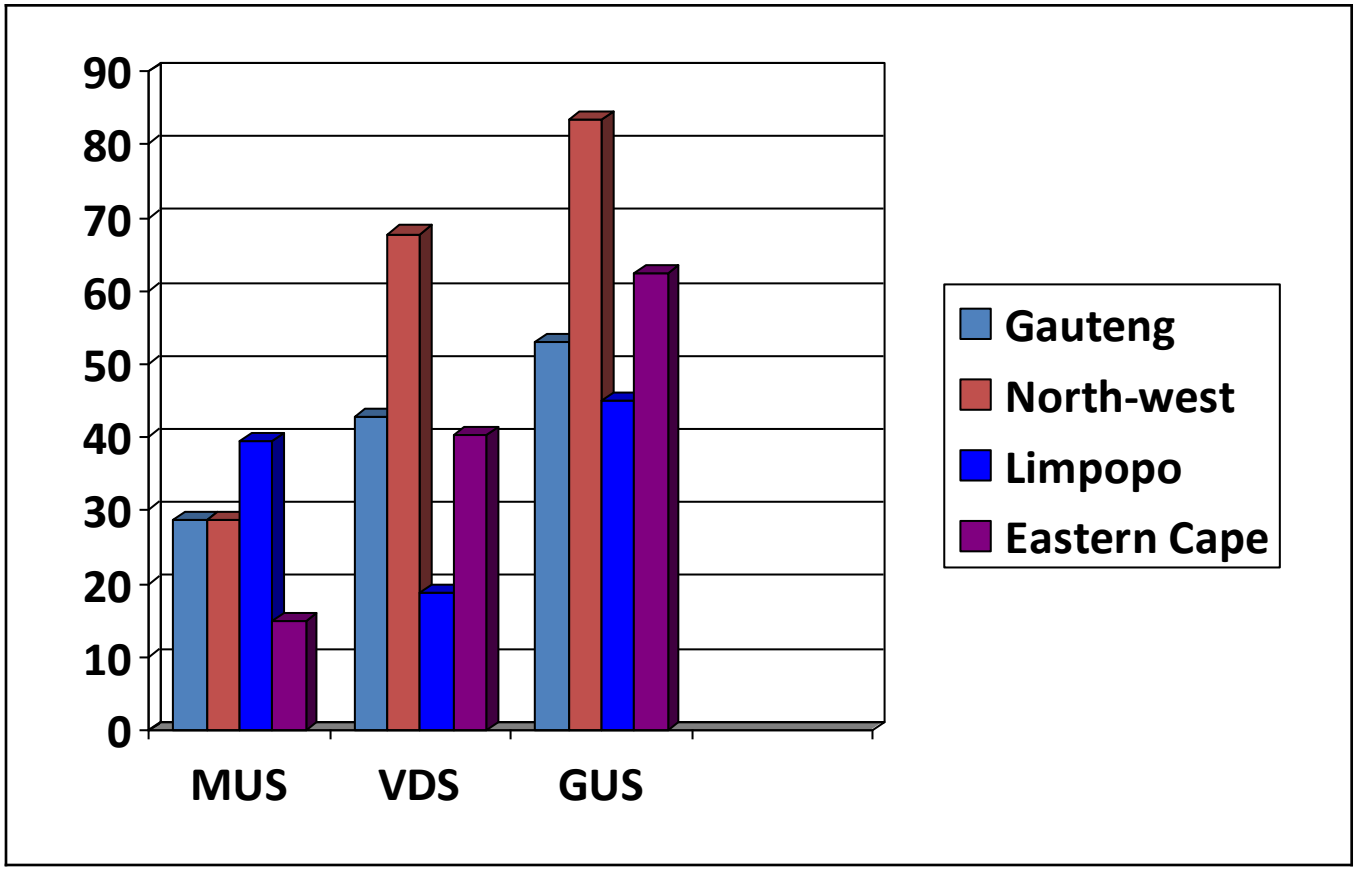
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Sero-prevalence of HSV-2 by Syndrome (2010-2011)



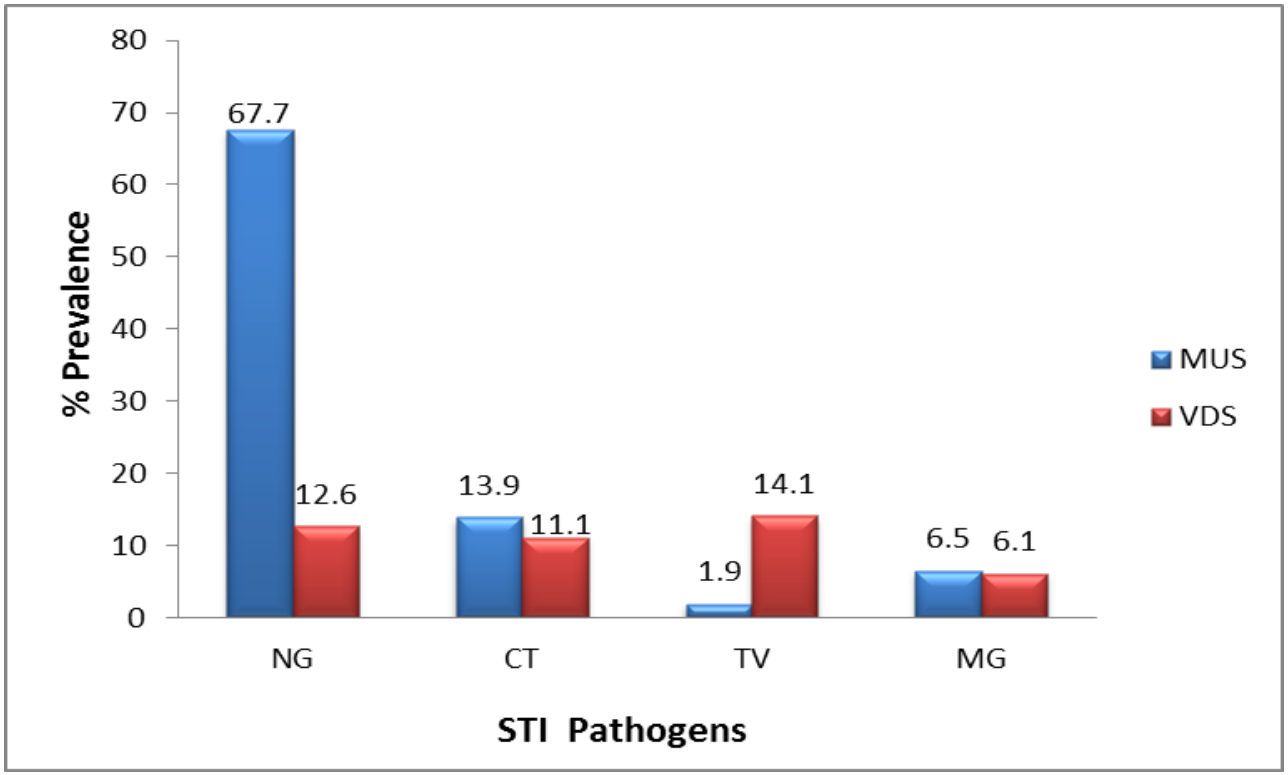
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Sero-prevalence of HIV by Syndrome (2010-11)



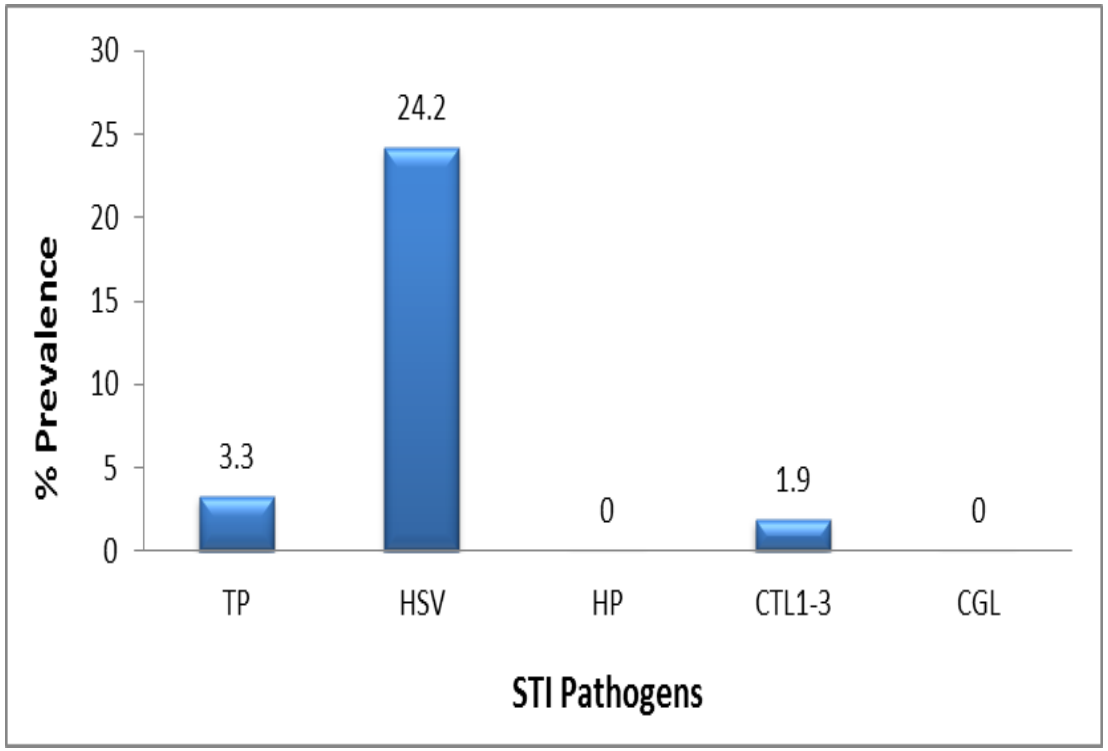
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology of MUS and VDS determined by M-PCR in KZN 2014



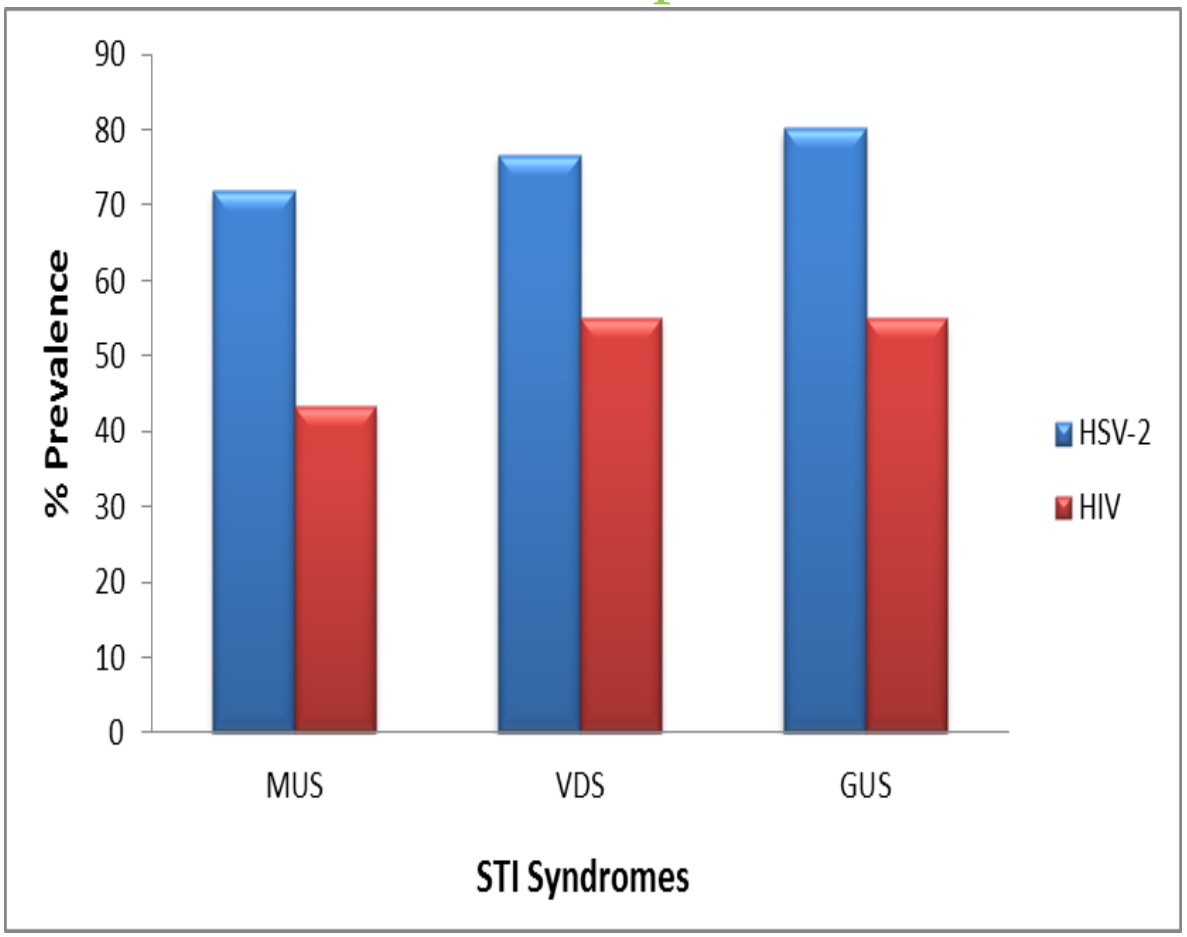
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Aetiology of GUS determined by M-PCR in KZN 2014



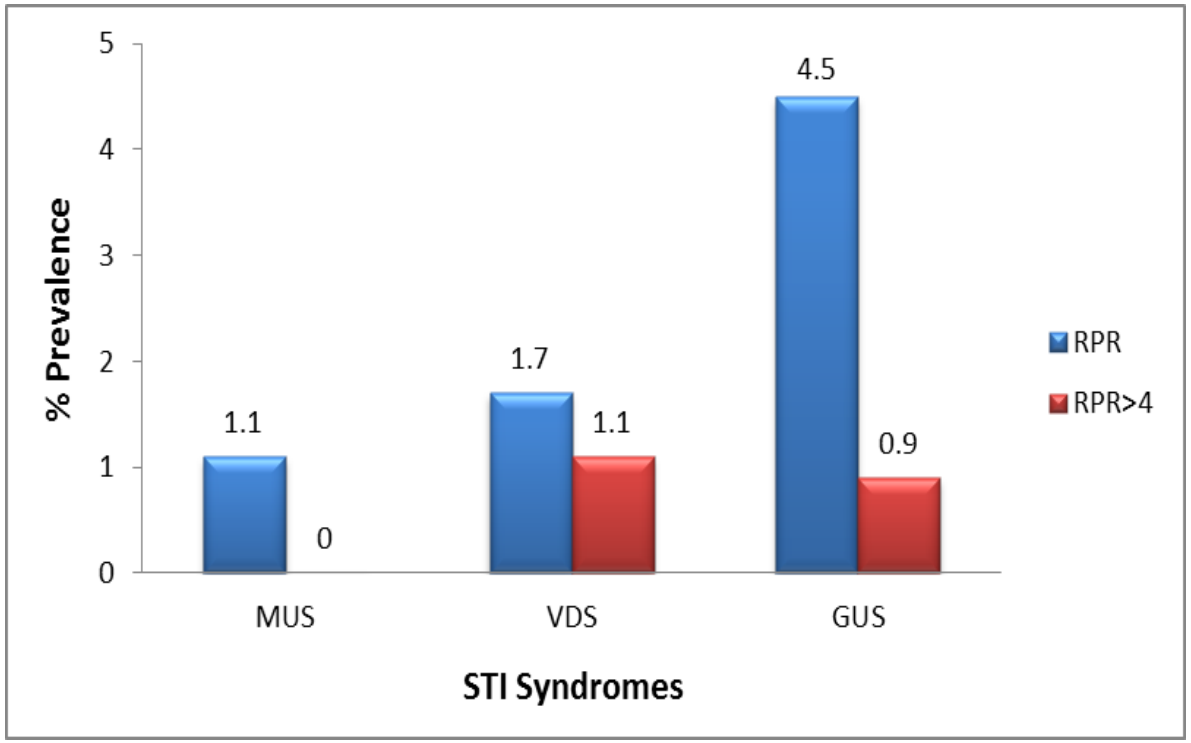
NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

HIV and HSV-2 Sero-prevalence for patients with MUS, VDS and GUS patients in 2014



NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

RPR serology in MUS, VDS and GUS patients in 2014.



NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Requirements for STI/HPV surveillance

STI microbiological surveillance requires:

- Aetiological surveillance to validate STI syndrome management algorithms
- Antimicrobial resistance studies (N.gonorrhoeae)

STI aetiological and gonococcal resistance studies are required in different key populations to inform NDoH on appropriateness of STI treatment algorithm

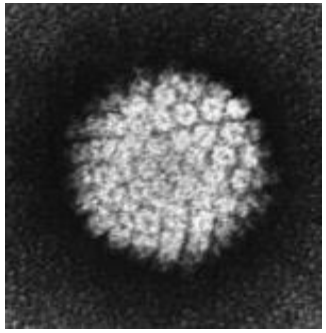
- STI clinic patients at primary healthcare facilities
- Asymptomatic family planning clinic patients at primary healthcare facilities
- Core groups (MSM, sex workers, truck drivers etc)

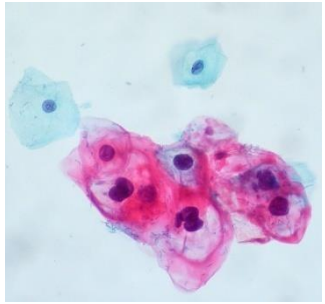
HPV surveillance is key to informing NDoH on pre-/post-HPV vaccine prevalence of high risk HPV types i.e HPV vaccine impact

HPV surveillance should be undertaken at 2 levels:

- In young 18-25 year old women family planning clinic patients (proxy for community)
- In women attending colposcopy clinics at tertiary hospitals with HSIL/CA lesions

Human papillomavirus surveillance





- **National surveillance pre-introduction of an HPV vaccine is essential for monitoring vaccine effectiveness**

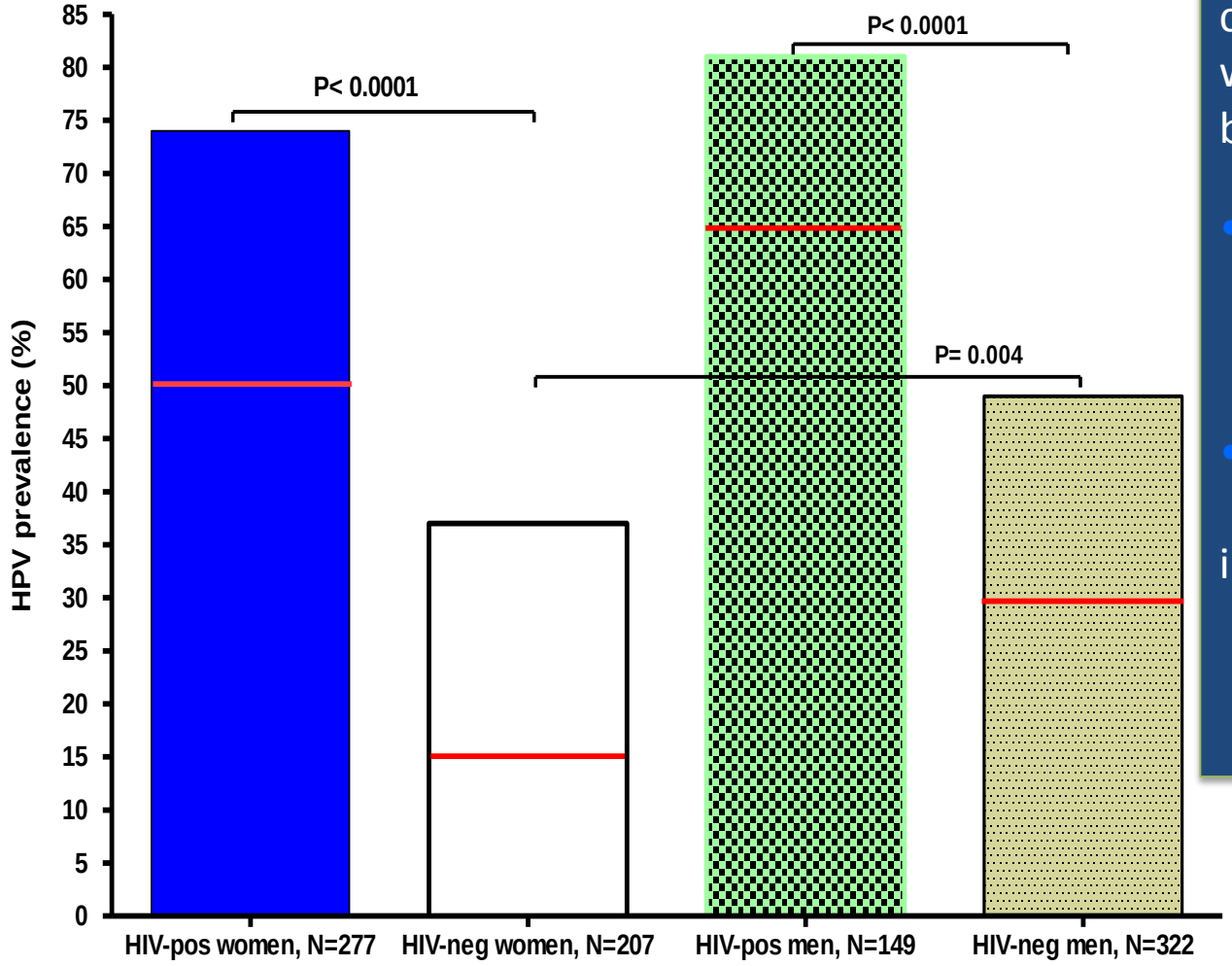
- HPV surveillance to be established in 2013 with GDD funds among family planning clinic attendees (10 sites/province)
- HPV surveillance to be established in 3 sites among women with high grade cytological lesions undergoing colposcopy

- Human Papillomavirus Laboratory Network for the Africa region (HPV LabNet)

  - aims to improve the quality of laboratory services for effective surveillance and monitoring of HPV vaccination impact through enhanced laboratory support

NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

HPV PREVALENCE IN WOMEN AND MEN

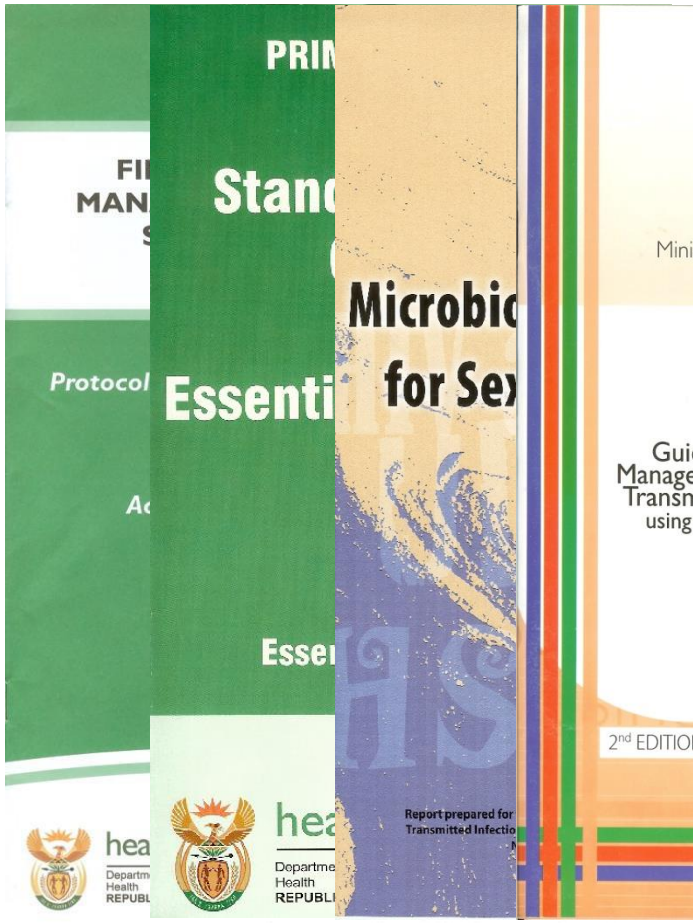


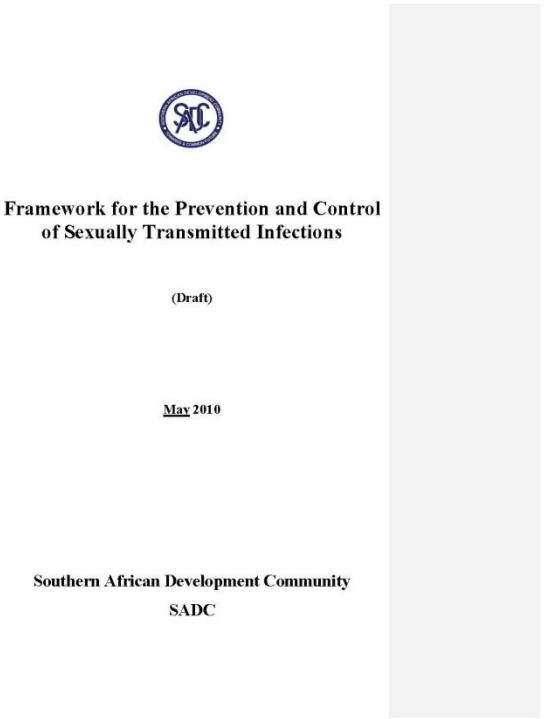
- Genital HPV prevalence was higher in HIV-positive compared to HIV-negative women and men (P<0.0001 for both).
- HIV-positive women and men have higher prevalence of multiple HPV-type infection
- HIV-negative men had higher prevalence of HPV-type infection and multiple infection compared to HIV-negative women.

NATIONAL HEALTH LABORATORY SERVICE
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

HPV prevalence includes high-risk and / or low-risk HPV types. Red line in bars indicate prevalence of multiple HPV infection

Surveillance Outcomes




Framework for the Prevention and Control of Sexually Transmitted Infections

(Draft)

May 2010

Southern African Development Community

SADC

South Africa,

Namibia

SADC Region

NATIONAL HEALTH LABORATORY SERVICE

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES