

National STI Microbiological Surveillance Programme



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Sexually Transmitted Infections Reference Centre
National Institute of Communicable Diseases (NHLS)
South Africa





Mission statement of the NICD

“To be a resource of knowledge and expertise in regionally relevant communicable diseases to the South African Government, to SADC countries, and to the African Continent at large, in order to assist in the planning of policies and programmes and to support appropriate responses to communicable diseases issues”



Key players in STI surveillance in South Africa

- National Department of Health
 - STI Reference Centre (co-ordination)
 - Collaborating Universities
 - National Health Laboratory Service
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Patient Issues

- ❑ Protocol approved by South African National Department of Health
 - ❑ Ethics approval from the HREC (Medical) - University of the Witwatersrand
 - ❑ Clinic-based surveillance system
 - ❑ Informed written consent
 - ❑ Anonymous testing
 - ❑ Patients managed syndromically
 - ❑ Ideally 3 months' collection period
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Male urethral syndrome (MUS)

Pathogens

Neisseria gonorrhoeae

Chlamydia trachomatis

Trichomonas vaginalis

Mycoplasma genitalium

First-line treatment

- Doxycycline 100mg bd x 7d.
- Cefixime 400mg stat p.o.

Non-responders

- Re-treat with first-line agents if likely re-infection
 - Give ceftriaxone 250mg stat i.m. (resistant gonorrhoea)
 - Metronidazole 2g stat p.o. for others
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Vaginal discharge syndrome (VDS)

Pathogens/ Conditions

Neisseria gonorrhoeae

Chlamydia trachomatis

Trichomonas vaginalis

Mycoplasma genitalium

Bacterial vaginosis

Candidiasis

First-line treatment

- Doxycycline 100mg bd x 7d.
- Cefixime 400mg stat p.o.
- Metronidazole 2g stat p.o.

If candidiasis suspected

- Give Add clotrimazole pessary + / - cream
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Genital ulcer syndrome (GUS)

Pathogens

Herpes simplex virus

Treponema pallidum

Haemophilus ducreyi

Chlamydia trachomatis L1-L3

Klebsiella granulomatis

First-line treatment

- Benzathine penicillin 2.4 MU stat I.M.
- Erythromycin 500mg 6 hourly p.o. x 7 d.
- Acyclovir 400mg 8 hourly p.o. x 7 days

Non-responders

- Refer



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 smear for Gram stain*
 - endourethral culture for gonococci
 - endourethral swab/urine for NAATs
- **Vaginal discharges**
 - high vaginal swab for slide
 - endocervical swab for NAATs

* In Gauteng NMS only



Gonococcal Culture

- Isolation of *Neisseria gonorrhoeae* on selective New York City medium
 - MIC determination using E tests
 - Cefixime, Ceftriaxone and Ciprofloxacin E tests initially
 - Agar dilution MICs to be later performed on stored isolates (other antimicrobial agents)
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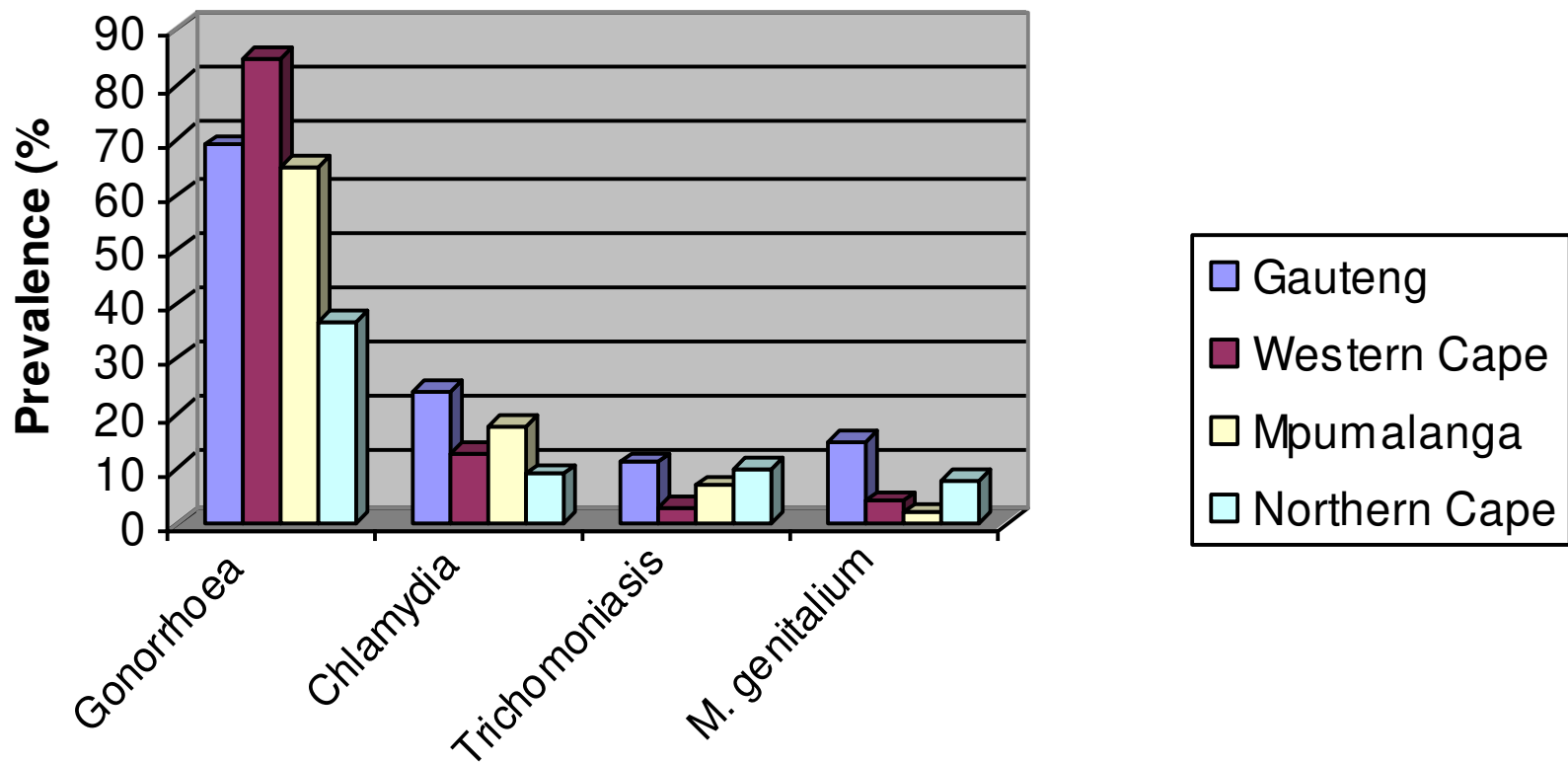


NAAT Testing for STI Pathogens

- Genital ulcers
 - Herpes simplex virus (herpes)
 - *Treponema pallidum* (syphilis)
 - *Haemophilus ducreyi* (chancroid)
 - *Chlamydia trachomatis* L1-L3 (LGV)

 - Urethral/vaginal discharge
 - *Neisseria gonorrhoeae* (gonorrhoea)
 - *Chlamydia trachomatis* D-K ('chlamydia')
 - *Trichomonas vaginalis* (trichomoniasis)
 - *Mycoplasma genitalium*
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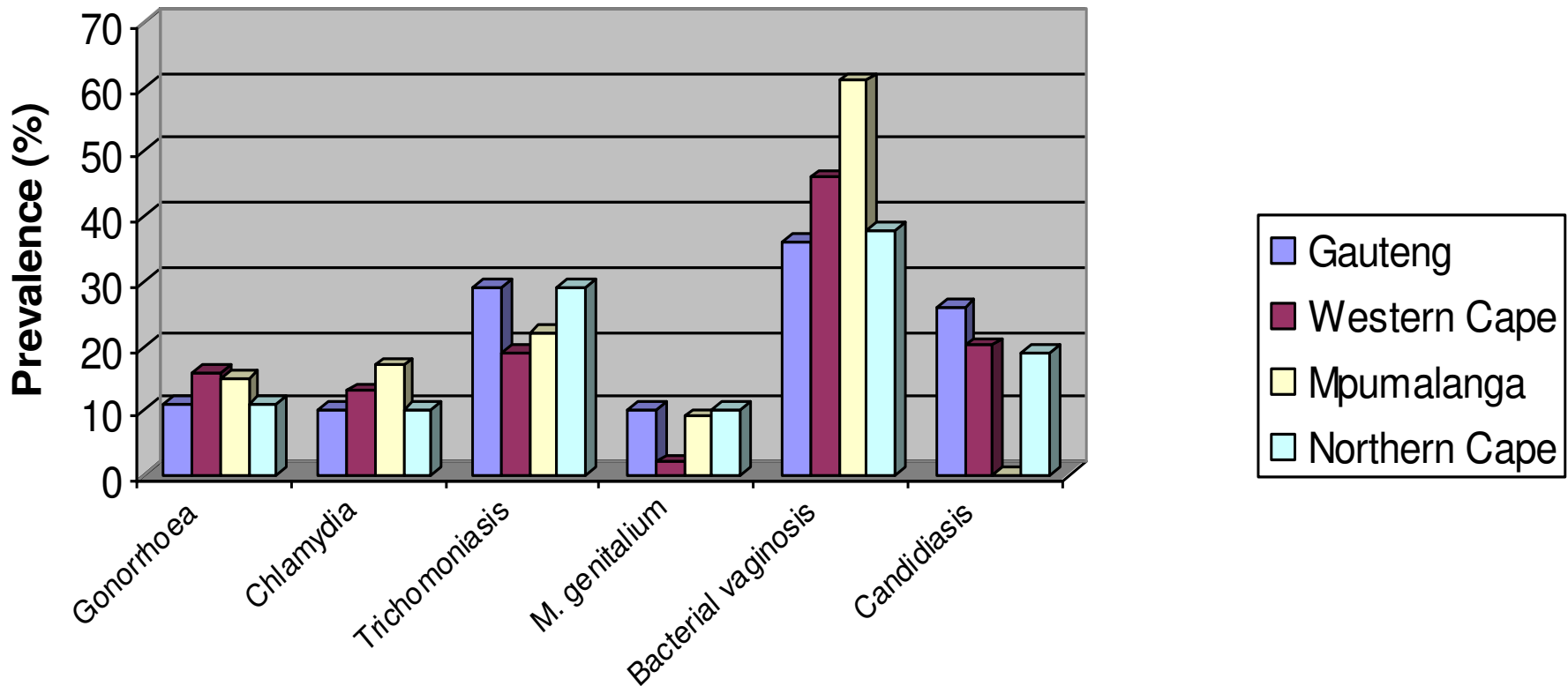
Aetiology of MUS by Diagnosis (2006-2007 Surveys)



Sharing of data by Professors Willem Sturm and Preshnie Moodley,
Nelson Mandela School of Medicine, University of KZN, Durban is gratefully acknowledged

Aetiology of VDS by Diagnosis

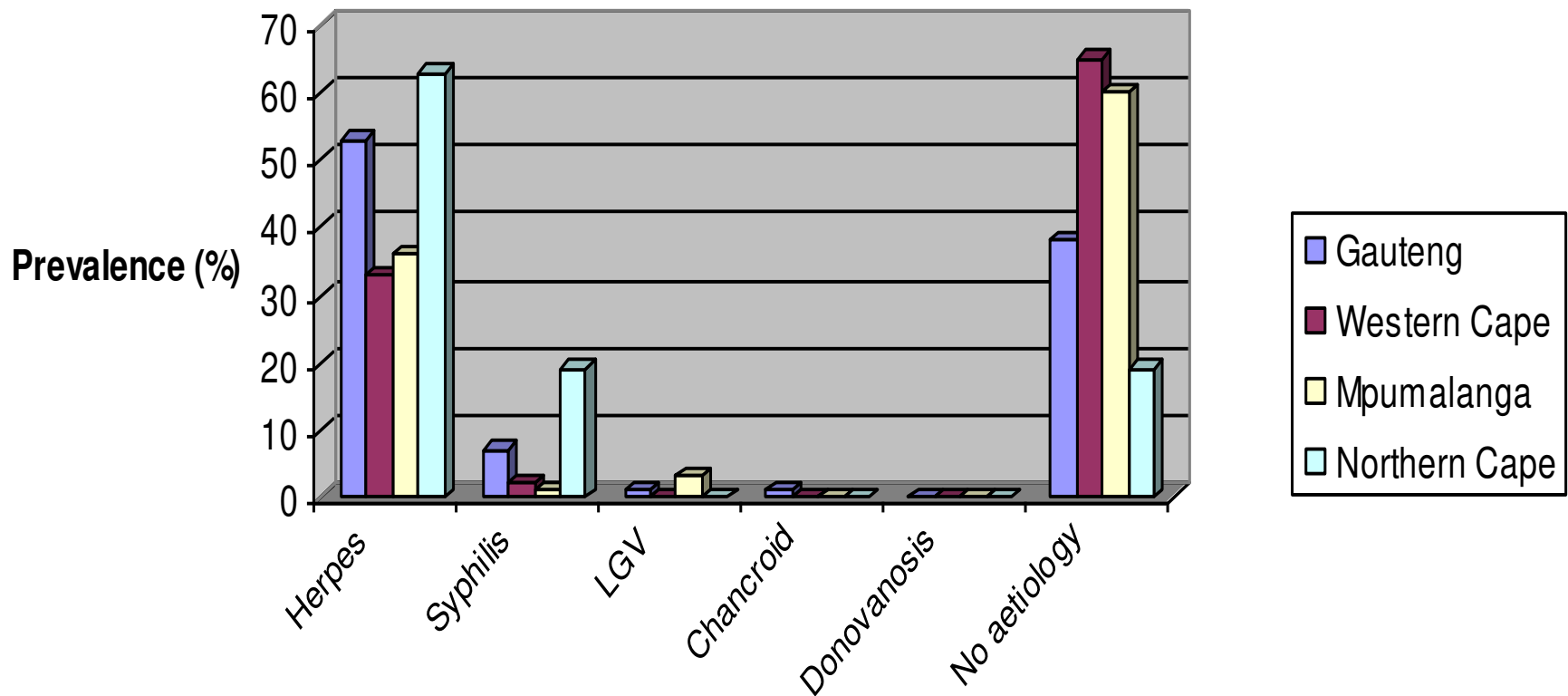
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Aetiology of GUD by Diagnosis

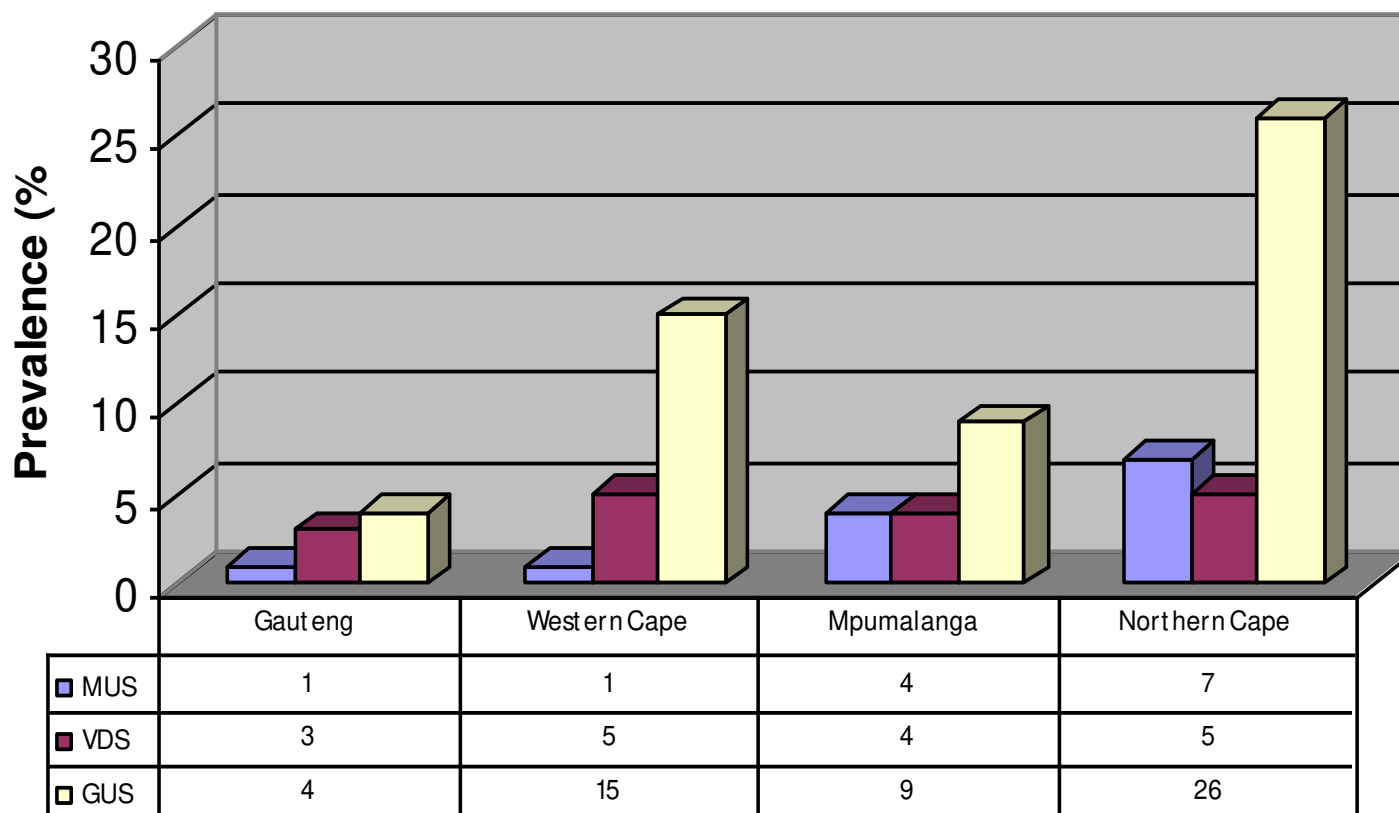
(2006-2007 Surveys)



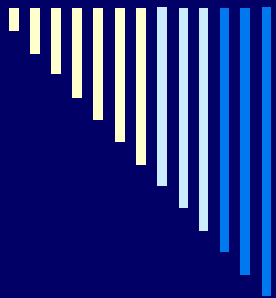
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Seroprevalence of RPR ($\geq 1:4$) by Province

(2006-2007 Surveys)

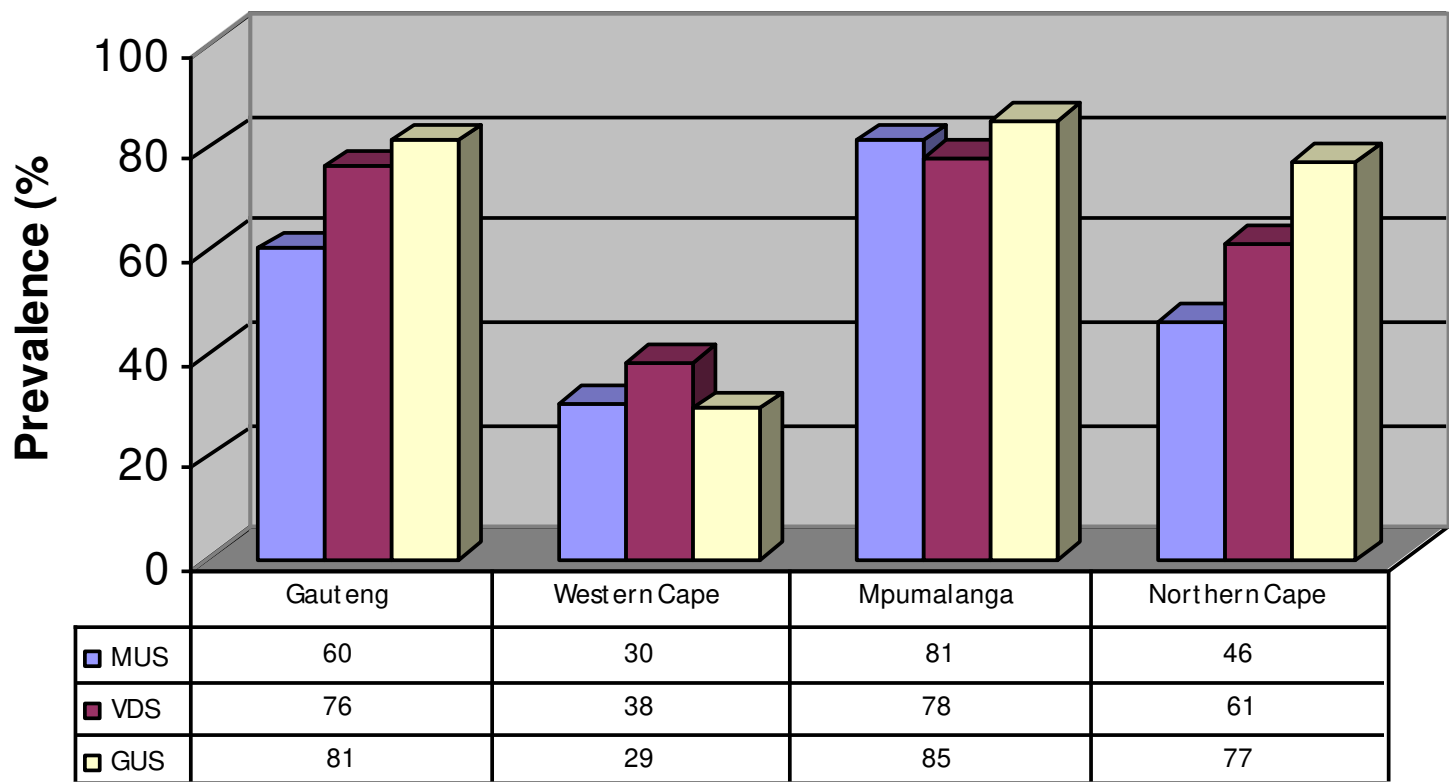


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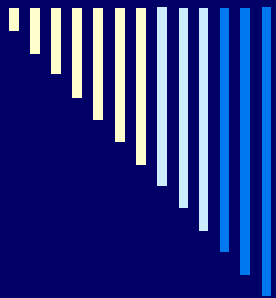


Seroprevalence of HSV-2 by Province

(2006-2007 Surveys)

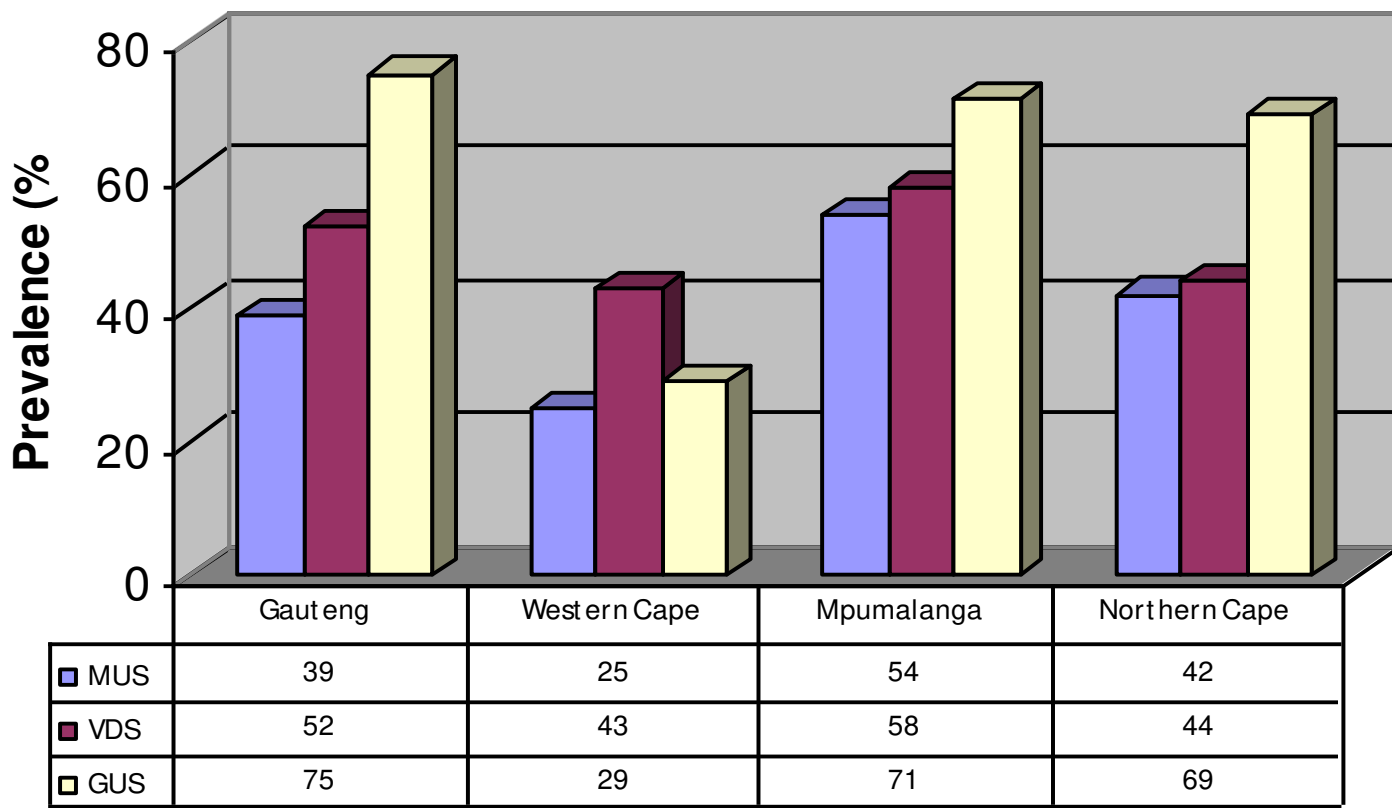


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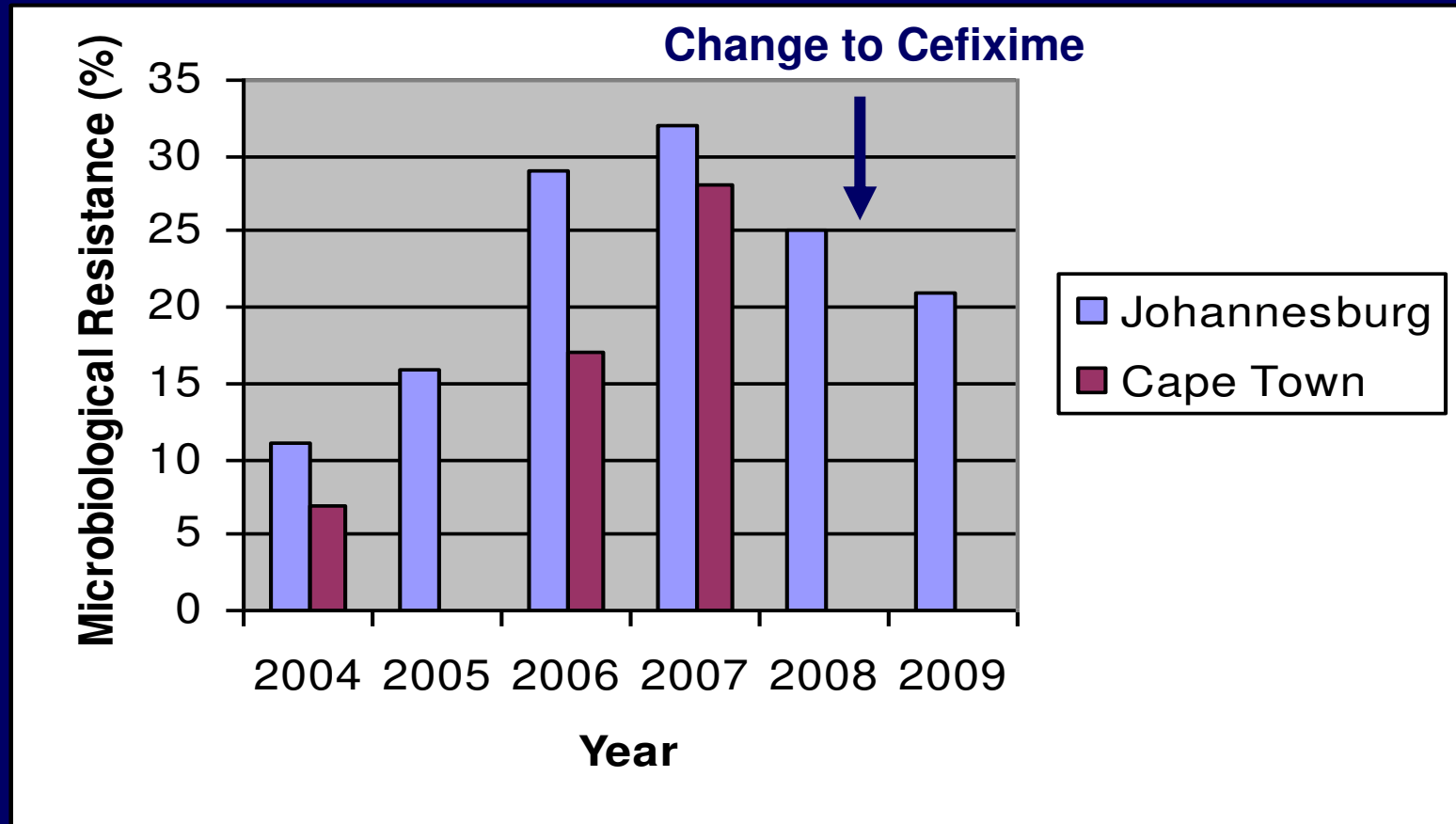
Seroprevalence of HIV by Province

(2006-2007 Surveys)



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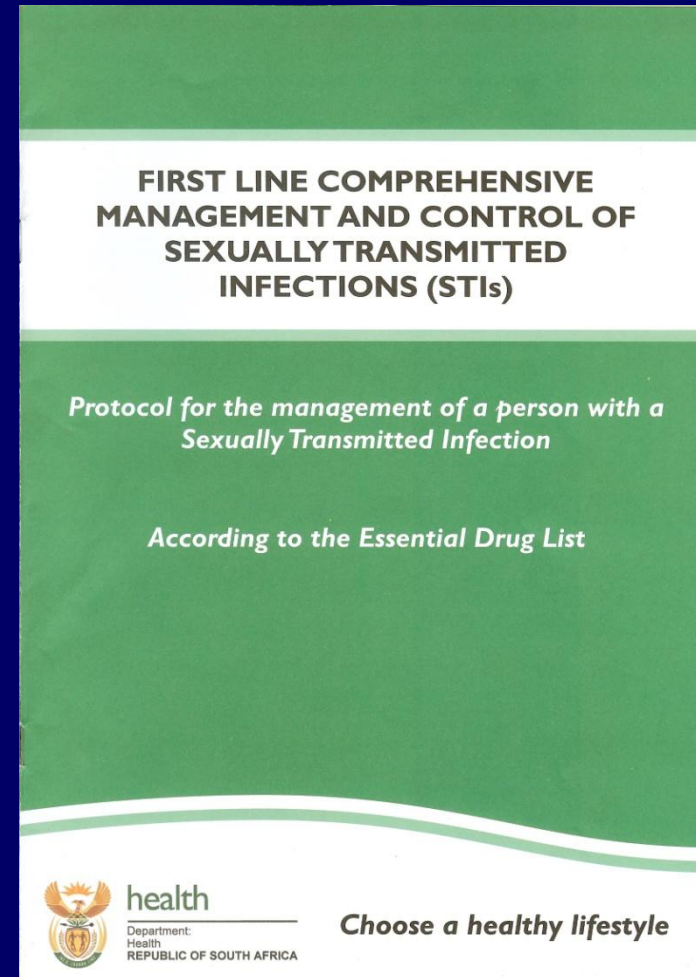
Rise of Ciprofloxacin Resistant Gonorrhoea in South Africa



In 2007, the ciprofloxacin resistant phenotype was significantly associated with HIV serostatus ($p = 0.034$) in Cape Town and Johannesburg.

New STI Guidelines 2008

- Evidence-based
- Ciprofloxacin removed as first line treatment for gonorrhoea
- Cefixime for MUS/VDS
- Ceftriaxone for SSW/LAP
- Acyclovir for GUS





Conclusions

- ❑ STIs remain a major problem in South Africa and likely continue to play a role in driving the HIV epidemic
- ❑ Gonorrhoea remains the most frequent cause of the MUS syndrome
- ❑ Quinolone resistance has increased markedly in much of the world and many countries have switched therapy to a 3rd generation cephalosporin
- ❑ Trichomoniasis is the most common STI in women with VDS
- ❑ Genital herpes is the major cause of genital ulceration – patients require careful health education concerning this recurring condition
- ❑ It is important to follow perform regular aetiological and antimicrobial resistance surveillance for STIs

