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Assessment of clinical knowledge and practices in the management of sexually transmitted infections in Johannesburg Metro

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Assessment of clinician knowledge and practices in the management of sexually transmitted infections in Johannesburg

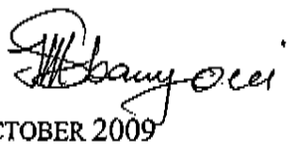
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A RESEARCH REPORT SUBMITTED TO THE FACULTY OF HEALTH SCIENCES, UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG,
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF PUBLIC HEALTH (MPH)

JOHANNESBURG, 2009

Candidate's declaration

I, MARIA SIBANYONI DECLARE THAT THIS THESIS IS MY OWN WORK. IT IS BEING SUBMITTED FOR THE DEGREE OF MASTER IN PUBLIC HEALTH IN THE UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG. IT HAS NOT BEING SUBMTTED BEFORE FOR ANY DEGREE OR EXAMINATION AT THIS OR ANY OTHER UNIVERSITY.

SIGNATURE: 

23 DAY OF OCTOBER 2009

Dedication

I dedicate this piece of work to the two dearest persons in my life; my mother Anna Sibanyoni and my daughter Kate Sibanyoni.

Abstract

Introduction

This study was conducted at selected Primary Health Care clinics in the Johannesburg Metro. The study explored the issues around Sexually Transmitted Infections by identifying gaps with regards to syndromic approach. Proper management and control of STI is crucial because STI lead to serious complications.

Objectives

T**o** assess clinician knowledge and practices in the management of sexually transmitted diseases (STIs) in the Johannesburg Metro District.

Methods

A descriptive (cross-sectional) study involving a retrospective review of 210 patient records of STI treatment and questionnaire-based interviews of 38 health care providers of STI services in 22 primary health care facilities in the Johannesburg Metro District. Data was collected to measure staff training on STI, provider knowledge of STI syndromic management, and provider adherence to STI syndromic management guidelines based on the District STI Quality of Care Assessment tool.

Results

Of the 38 providers that were interviewed, 29 (76%) were trained in STI management. Half of these had received their training in STI management > 4 years prior to this study. The proportion of providers who correctly stated STI syndromic management were 33 (87.0%) for penile discharge; 24 (63.0%) for vaginal discharge, 15 (39.0%) for genital ulcer and 14 (37.0%) for pregnancy with PVD. Of the 210

patient records reviewed, 148 (70.5%) had prescriptions that were adherent to STI guidelines.

Conclusion

Clinicians in the public health facilities do have adequate knowledge of syndromic management of STI. Poor adherence to the national guidelines for STI management calls for an ongoing and regular training in STI management in the Johannesburg Metro District.

Acknowledgement

First, I give thanks to almighty God for the gift of life and the strength to carry out this research project. It is a dream come true because I never thought I could get this far.

Second, I would like to appreciate the efforts of the following persons for their tremendous courage and support during the course of this project: Mary Kawonga (my supervisor), and Wits Faculty Research Committee (for financial support).

Acronyms and Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
CDC	Centre for Communicable Diseases
DISCA	District STI Quality of Care Assessment
HIV	Human Immunodeficiency Virus
NDoH	National Department of Health
NGO	Non-Governmental Organisation
NHLS	National Health Laboratory Services
PHC	Primary Health Care
STD	Sexually Transmitted Diseases
PVD	Per Vaginal Discharge
STI	Sexually Transmitted Infection
WHO	World Health Organisation
PPT	Periodic Presumptive Treatment

Table of Contents

Candidate's declaration....i
Dedication....ii
Abstract....iii
Acknowledgement....v
Acronyms and Abbreviations....vi
Table of Contents....vii
List of Tables....viii
List of Figures....ix
Chapter One Introduction....1
1.1 Background....1
1.2 Problem statement....3
1.3 Justification for the study....5
1.4 Literature review....5
1.5 Objectives....9
1.5.1 Broad aim....9
1.5.1 Specific objectives....9
Chapter Two Methodology....10
2.1 Study design....10
2.2 Study setting....10
2.3 Study population....10
2.4 Sampling....11
2.5 Measurement....12
2.5.1 Variables....12
2.5.2 Data collection tool....13
2.6 Data Processing and Analysis....15
2.6.1 The facility as the unit of analysis....16
2.6.2 The provider as the unit of analysis....16
2.6.3 The patient record as the unit of analysis....17
Chapter Three Results....19
3.1. Description of facilities included in the study....19
3.2. Provider Training and knowledge of STI management....20
3.2.1 Demographic profile....20
3.2.2 Training....21
3.2.3 Knowledge of STI management....22
3.3 Adherence to STI Management Guidelines....25
Chapter Four Discussion....28
4.1 Clinicians knowledge and training....29
4.2 Clinicians adherence to syndromic guidelines in managing STIs....32
4.3 Provider (clinicians) workloads at PHC....35
4.4 Limitations....36
Chapter Five Conclusion and Recommendations....37
5.1 Conclusion....37
5.2 Recommendations....38
APPENDIX A: DATA COLLECTION TOOL....44
APPENDIX B: Ethics Approval....49

List of Tables

Table 3. 1 Clinicians and facilities: Johannesburg Metro regions 3, 8, 10: 2006 20

Table 3. 2 Demographic profile of the sample of STI providers in the 3 regions 21

Table 3.3: A summary of trained and untrained providers in the 3 regions 21

Table 3. 4: Provider knowledge of clinical management of vaginal discharge 22

Table 3. 5 Provider knowledge of clinical management of penile discharge 23

Table 3. 6 Provider knowledge of clinical management of genital ulcer 23

Table 3. 7 Provider knowledge of treatment for STI syndromes: trained and untrained STI providers in all regions..... 24

Table 3.8: Adherence of drug prescriptions to STI management guidelines..... 25

List of Figures

List of figures

Figure 3.1 Prescriptions that were adherent to STI syndromic management guidelines……26

Chapter One Introduction

1.1 Background

Sexually transmitted infections (STI) have become a global public health burden: the World Health Organization (WHO) estimates that about 340 million new cases of curable STI occur each year particularly in the age group 15- 49 years (WHO, 1998). The highest incidence occurs in Sub-Saharan Africa where an estimated 69 million new cases per year occur in a population of 269 millions adults of age 15-49 years, resulting in an incidence of 256 per 1000 population. These high rates of STI seen in Sub-Saran Africa are associated with the evolving HIV epidemic in the region (Ramkissoon et al, 2004).

It estimated that approximately 11 million treatable STI occur in South Africa annually (Mullick et al, 2001); and a national survey has documented that as many as 10-12% of adults of reproductive age report STI symptoms during a three month period (Department of Health, 1998). The burden of STI is likely to be underestimated since many STI are asymptomatic and therefore unlikely to be detected through self reporting (Kamoga & Sonko 2003).

A number of interventions have been established to strengthen STI management and prevention services. At a global level, the syndromic management of symptomatic STIs is recommended as an approach for prevention and control of the spread of STI (Wilkinson et al, 1997). This approach includes early detection and treatment of symptomatic STIs, condom promotion, treatment of sexual partners, and counseling for preventive behavior change. Moreover in-service training, transfer of skills to health care providers, and the implementation of systems for monitoring and

evaluation of key activities, are also recommended to ensure opportunities to provide prompt and effective treatment for STI are not missed (Ramkisson et al, 2004).

In South Africa, the National Department of Health has implemented a national STI control program that is largely based on appropriate treatment and management of STI. The corner stone of this treatment strategy is the use of syndromic management of STI cases in the public sector (Kamoga & Sonko , 2003) In addition the National Department instituted a national HIV/AIDS/STI Strategic Plan for South Africa 2000-2005 which prioritised the effective management of patients with STIs (Department of Health, 2000). The key focus of the national strategy for the control and management of STIs is on syndromic management at primary health care facility level. In addition STI management should be integrated within the Primary Health Care (PHC). In addition for South Africa to be able to achieve the NSP target of reduction of 50% in HIV incidence rate by 2011, the is a great need to increase access to quality STI service in the public and public sector offered by adequately trained staff utilizing the updated syndromic management guidelines (Department of Health, 2007).

In South Africa, National STI Treatment Guidelines that are evidenced–based are used at the PHC level. Together with the guideline, training of PHC staff in syndromic case management and the provision of effective drugs have been introduced. In addition, the 'PHC package' which outlines norms and standards for prevention and management of STIs in public sector facilities has been developed (Ramkissoon et al, 2004).

The National Department of Health (NDoH) in collaboration with provincial and local governments, the National Health Laboratory Services (NHLS), academic and research institutions, non-governmental organizations (NGO's) and private initiatives,

introduced the national strategy for the control of and management of STI in the second half of the 1990's. The National STI Initiative was established in September 1997, following a national workshop on the sate of STI management in South Africa. The main goal of this was to strengthen district level capacity to implement an effective STI programme. The key aims of this initiative at the clinic and sub-district level include (Department of Health, 1998).

- Improving evaluation and monitoring the quality of care at clinics
- Identifying aspects of care that needs strengthening
- Providing training to clinicians, supervisors, and trainers
- Strengthening related areas such as drugs and condom supply, partner treatment, antenatal syphilis testing and health information management.

1.2 Problem statement

STI lead to serious complications in both adults and infants, and they can facilitate transmission of HIV (Mullick et al, 2001). The effective management of STIs is important because poor management of STIs is a threat to HIV prevention efforts. Effective STI management using the syndromic approach reduces the transmission of HIV, and improved clinical services for STIs, using the syndromic approach, can reduce the incidence of HIV infection by approximately 40% (Grosskurth et al, 1995). The control of STIs is therefore a public health priority. Services for early detection and treatment of STI are a crucial part of an STI control strategy. These services should be of good quality with appropriate infrastructure, equipment, and well-trained staff to ensure effective management of STI (Mullick et al, 2001).

However, assessments of STI services in South Africa show that the management of STI`s is poor. A study by the Centre for Health Policy, University of the

Witwatersrand showed that only a third to as few as 3% of STI`s were treated effectively by general practitioners in the private sector (Conolly et al, 1999) Another study in rural South Africa found that private practitioners' knowledge of syndromic management was extremely limited (Mullick et al, 2001).

According to a study that was conducted in a South African mining town, there remains room for improvement in the quality of treatment of STIs in both private and public sectors. The study highlights that further training is needed in the treatment of warts, herpes, buboes, and genital ulcer, and that rational drug use and over prescription in the public sector also need to be addressed (Ndlovu et al, 2005). However the main reasons that hinder the provision of good quality of STI care include: irregular availability of drugs and other resources; high patient work load due to shortage of staff; non-adherence to treatment guidelines by providers; and inadequate staff training and knowledge (Moys, 2003).

In addition it is important that clinicians and other professionals develop knowledge and awareness of sexual health issues and become comfortable discussing them. This will enable clinicians to utilize clinical opportunities to effectively counsel patients regarding healthy sexual behaviors and therefore improve clinical care for STIs (Thomas & William, 1997).

This study explored the issue of STI management in selected clinics in the Johannesburg Metropolitan district. The study investigated clinicians' knowledge and practices regarding the management of STI at primary care level, as defined by the STI syndromic management guidelines. Clinicians in this study included medical doctors and professional (registered) nurses.

1.3 Justification for the study

It is important to assess clinicians' knowledge and practices regarding the management of STIs because poorly managed STIs lead to serious health complications like abortion; pelvic inflammatory disease in women; infertility in both women and men; and congenital abnormalities caused by syphilis in babies (Sonko et al, 2003). There are no similar studies that were conducted in Johannesburg Metropolitan District (Johannesburg Metro). Therefore this study was done to give an overall picture of whether clinicians are knowledgeable with STI treatment and to identify gaps. In addition this study was done to inform the district about clinicians' practices and whether they are adherent to STI management guidelines. The data from this study may be used by Regional managers, STI/HIV coordinators to outline an action plan to address shortcomings and gaps and improve the quality of STI management.

1.4 Literature review

The syndromic approach to the management of symptomatic STI is a World Health Organization (WHO) initiative based on the premise that there is a strong correlation between signs and symptoms and the presence of a particular STI (WHO, 1991). In this approach, clinicians treat clients based on history and physical examination only rather than laboratory tests (Kamonga & Sonko, 2003). It is an approach that is mostly used in developing countries and also extensively used in the industrialized world (Plummer, 2003). It has its limitations, including: firstly the approach is based on symptomatic treatment therefore asymptomatic patients may be missed; secondly because patients are treated for multiple infections at the same time, there is a risk of over treating some, thus leading to drug wastage and drug resistance (Kamonga &

Sonko, 2003); and finally, the vaginal discharge algorithms have a low sensitivity and specificity for the management of cervicitis (Pepin et al, 2004).

Despite its limitations, the syndromic approach has been shown to be an effective strategy and is still recommended as the standard of care in many developing countries because of its simplicity and feasibility in low resource settings due to its non-reliance on laboratory services. In addition syndromic management has been proven to be most feasible and cost effective at the PHC level. Furthermore syndromic management is highly recommended because it comprises of a range of important activities aimed at reducing STI transmission, including drug treatment and compliance, partner notification and treatment, behavioral counseling and condom promotion (Ramkissoon et al, 2004). Lastly one of the key benefits of the syndromic approach is that it allows for standardization of practice and patients receive treatment at the first visit because the treatment regimen targets all common causative agents of the presenting symptom/s.

Though algorithms are developed to guide practice, management of STI in practice may not be according to these guidelines or protocols because firstly there are several problems that continue to recur and are difficult to address due to the limited resources the health sector is faced with. Secondly clinicians may not adhere to the prescribed guidelines or protocols due to lack of training resulting in patients receiving inappropriate treatment. Thirdly lack of training and in-service training may result in clinicians not being able to follow the algorithms (Kamonga & Sonko, 2003).

Availability of syndromic guidelines does not always translate into effective management of STI. The literature shows that the lack of training of staff involved in STI services is an important barrier to effective management. In South Africa, the national STI/HIV baseline assessment done during 2002/2003 indicates that effective

management of STI`s is compromised by lack of trained staff because of inadequate training at all levels, leading to the inappropriate use of available drugs (Ramkissoon et al, 2004).

This is further highlighted in a study in Botswana's primary health care facilities, where one third of women and one-fifth of men did not receive appropriate treatment for their STI, in spite of excellent provision of drugs. This study emphasised the importance of strengthening formal training and in-service training for providers involved in the management of STIs (Boonstra et al, 2003). The authors alluded to two strategies for improving the quality of management of STI`s: one is an improvement of the quality of history taking and clinical examination of clients with STI; and the other is to ensure strict adherence to national STI management guidelines and algorithms (Boonstra et al, 2003).

Many PHC service providers do not see sexual health as their role; some are prejudiced and mostly simply do not have knowledge or skills to manage STI adequately. In addition some are uncomfortable with managing STIs and some have over-riding priorities (Plummer, 2003). Provider knowledge and attitudes regarding STI and STI services therefore play an integral part in STI management. In a study conducted in Karachi, Pakistan: 85% of clinicians advised their patients regarding condom usage; 36% thought that STI patients had loose sexual morals; and 43% believed STI patients were drug addicts. Over 90% of the physicians were however willing to attend educational sessions and follow a national STI protocol (Khandwalla et al, 2000). Poor provider knowledge of STI management may lead to ineffective treatment of STIs, and negative attitudes from health care providers may be a barrier to patients accessing STI services; these issues both may lead to poor STI control.

Another factor that may impact on clinician's management of STIs is the issue of high staff workloads, particularly at PHC facilities. High workloads lower productivity and staff morale, and also impact on the quality of services. Workload is not only a question of individual nurses' inefficiency and low productivity, although these are undoubtedly contributing factors, which need to be taken into account. Rather workload is quite fundamentally determined by dramatic structural differences, such as location, size, staffing levels, infrastructure and resources (Lehmann & Sanders, 2002). Workloads particularly at PHC facilities, continues to be controversial issue. A 2000 national survey of PHC facilities in South Africa found that, although unevenly distributed, fixed facilities had substantially lower patient loads in 2000 compared to 1997 but views on what constitutes appropriate workloads continue to vary (Lehmann & Sanders, 2002).

The assessment and monitoring of the quality of clinical management of STIs is an important aspect of programme management The National STI Initiative is currently operating in 25 sites around South Africa (Sonko et al, 2003). A tool called the District STI Quality of Care Assessment (DISCA) is used by researchers in these sites to monitor various aspects of the quality of STI services and to give information to managers and managers implement DISCA at regular intervals. In the STI Initiative sites, the DISCA is used every 9 months for continuous monitoring and evaluation, and the information collected is used to guide further interventions (Sonko et al, 2003).

The DISCA tool (see Appendix A) has now been introduced countrywide at district level to assist health authorities and clinic managers to assess the quality of STI services in general (Sonko et al, 2003). This is a useful tool because it assesses various aspects of STI services including: accessibility of STI services; state of

infrastructure; staffing and training; and appropriateness of clinical management of STI syndromes. The information obtained guides development of interventions and forms a baseline from which programme evaluation can be done.

This study used the DISCA tool to assess the quality of STI services in the Johannesburg Metro District. It formed part of a broader study on STI services in the Johannesburg Metro district. The focus of this study was on clinical management of STI as a process indicator of quality (clinician knowledge and practices in the management of STI`s), while the other study assessed service provision indicators of quality.

1.5 Objectives

1.5.1 Broad aim

The aim of this study was to assess the quality of STI services provided by selected PHC facilities in Johannesburg Metro, with a particular focus on clinicians' training in the clinical management of STI, and their knowledge and practices regarding clinical management of STI in relation to syndromic management guidelines; and to give recommendations to health authorities for STI programme improvement.

1.5.1 Specific objectives

The objectives of this study refer to the period from March to April 2006 when the study was conducted.

1. To determine clinicians' knowledge on STI management
2. To assess clinician's training on STI`s management
3. To assess clinicians adherence to syndromic approach in managing STI`s
4. To assess provider-patient workloads at PHC level, with respect to STI patients

Chapter Two Methodology

This chapter describes how the study was conducted in 22 PHC facilities in Johannesburg Metro District. It includes study design, study setting, study population, sampling, measurement, and data processing and analysis.

2.1 Study design

This was a descriptive study involving retrospective review of health facility records and interviews with health workers involved in providing STI services. It was conducted in primary care level health facilities (clinics) in the Johannesburg Metro District from March to April 2006.

2.2 Study setting

Johannesburg Metro is one of the districts in the Gauteng province. At the time of the study, the Johannesburg Metro was divided into 11 regions (sub-districts) but later, the demarcations were revisited and the district currently has 7 regions. The study was done in three regions, representing township, suburban and inner-city types of environments. The study was conducted at clinics that provided STI care and were functional during the study period. These facilities included both provincial and local authority clinics. All the primary care facilities included in the study are nurse driven; therefore the main focus of the study was on nurse clinicians that provide STI services.

2.3 Study population

The study population included all fixed primary care facilities in the Johannesburg Metro district that were functional at the time of the study. There were 96 primary care facilities in Johannesburg Metro which included: 73 fixed facilities, 11 satellite clinics and 12 mobile clinics. At the time of this study, these facilities were distributed

in eleven regions (sub-districts). Due to limitations of time and resources, not all facilities could be studied, so a sample of 22 fixed facilities were studied, in three purposively selected sub-districts (regions). Within each facility, the study populations were: all health records for patients who were treated for an STI; and health care providers that provided STI services.

2.4 Sampling

Purposive sampling was done to select three regions in the health district, to represent suburban, township and inner-city types of environment. All 22 fixed primary care facilities in these 3 regions were included in the study. At each facility, all providers on duty on the day of the study were included in the study. All the health workers, a total number of 38 health care workers, from these 22 facilities that were on duty on the day of the study and providing STI services agreed to be interviewed. None of the providers that were providing STI services and were on duty on the day of the study refused to be interviewed.

A sample of 210 STI patient records from 21 of the 22 facilities in the three regions was selected to be reviewed for this study, representing 10 records per facility. Only 21 facilities participated in the record review because in one clinic providers were referring all their STI clients to another clinic next door, which was specializing in STI management

Only 4 facilities had clinic-retained records and 17 facilities had patient-retained records. In the facilities with clinic –kept records;, ten most recent STI patients records were identified and included in the study for review. In clinics with patients retained records, ten clients that were seen on the day of the survey were selected for inclusion in the study as follows: every third client in the queue at STI clinic starting

from a random point was selected for inclusion in the study. In 2 facilities where the clinic saw fewer than ten STI clients per day, staff were requested to retain 10 consecutive client records, and the researcher returned 2 weeks later to review patient these records for the study.

2.5 Measurement

2.5.1 Variables

In this study, the following variables were measured:

1. Demographic profile of providers
2. Staff training on STI care
3. Provider knowledge of STI syndromic management
4. Provider adherence to STI syndromic management guidelines

To assess clinicians' knowledge and training on STI management the following variables were measured;

- Demographic profile of the providers, which included:
    - sex and age
    - designation
- Training in STI management, which included the following variables
    - whether provider has attended formal STI training
    - when provider attended STI training
- Knowledge of STI management was measured by:
    - whether the provider stated correct management of the following STI syndromes: penile (urethral) discharge; vaginal discharge; genital

ulcer; and pregnant woman with vaginal discharge. The following were measured for each syndrome:

- the drug type
- the dosage
- the frequency of dosing
- the duration of treatment

To assess clinicians' adherence to syndromic guidelines for STI management, the researcher reviewed records and extracted the following variables to assess adherence:

- the diagnosis (by syndrome);
- the name of the drug/s prescribed;
- the dose of each drug prescribed; and
- the duration and frequency of the treatment prescribed.

To assess provider workloads, the following variables were:

- monthly headcount
- number of STI clients seen each month

2.5.2 Data collection

(a) Data collection tool

The District STI Quality of Care Assessment (DISCA) tool, a quality improvement instrument for use in clinics, was used to collect data from selected facilities in this study. The DISCA tool is a structured standardized tool, which was developed after extensive consultation with nurses, public health professionals, and health service managers in South Africa (Mullick et al, 2001). The DISCA tool is divided into several sections covering a number of key areas of STI care. The broad areas covered

in the DISCA tool are: access to STI services; availability of resources; routine data; staffing and training; knowledge of STI; and management of STI syndrome.

The DISCA tool was abbreviated for use in this study – to allow collection of data only for the aspects of STI care that were relevant for this study (that is: staffing and training, and management of STI). A data collection tool (abbreviated DISCA, see Appendix A) was developed for this study, including only the sections of the DISCA tool that were relevant to fulfill the objectives of this study

The DISCA allows the researcher to use a single tool to collect data about STI services, using various data collection methods.

(b) Data collection process

In this study, the methods used to collect data, using the DISCA tool, included:

- Review of routine data / facility records: in this study, the DISCA was used to determine the number of STI clients which were seen the previous month.
- Interview with facility manager: in this study the facility manager was requested to provide data on the clinic staff complement (number of providers working in the facility) and the training of staff.
- Interviews with health providers: in this study, clinicians were interviewed regarding their training, and knowledge of management of STI.
- Patient record review: in this study, patient records were reviewed to measure provider adherence to management guidelines.
- Provider interviews were done with 38 clinicians who were available on duty on the day of the study.

- A record review was done on a sample of patient records. The purpose of the review was to collect data to assess whether providers had prescribed the correct treatment for the various STI syndromes (correct drug at the correct dosage, for the correct duration and frequency) in accordance with national syndromic management guidelines. The sample of 10 STI records was retrieved, with the assistance of the clerical staff at each facility, the records were reviewed.
- Facility managers were asked the total number of providers that work in the facility and the numbers of clinicians that provide STI services.
- The facility monthly summary reports were used in all the 22 study clinics to get the monthly figures (headcount for the previous month) and also the number of STI clients that were seen in the same month.
- Data collection errors were checked and data cleaning was done. No field workers were used; the researcher checked the data for quality before capturing.

2.6 Data Processing and Analysis

The collected data was cleaned to identify and deal with any data extraction errors and to ensure that all relevant information had been captured onto the data collection tool. Each variable was coded using short variable names with appropriate response categories. The data was captured on Epi Info computer software, cleaned and checked for data capture errors. The data was analyzed using STATA computer software (version 8).

Descriptive statistics were employed to summarize the data. Proportions were used for categorical data and means for numerical data.

Analysis was done in three parts:

2.6.1 The facility as the unit of analysis

1. The number of facilities in the study was described by frequency distribution across the three regions.

2. Frequency distribution of the number of providers per facility.

3. Total number of STI client consultations recorded per facility per month; and the mean number of clients visiting the facility over a month period.

4. Ratios (staff: patient ratios) were used to describe staff workloads per facility, and per region. The distribution of staff: patient ratios across all 22 clinics were also analysed.

2.6.2 The provider as the unit of analysis

Analysis of data that was collected from provider interviews was done to describe:

(a) The demographic profile of the 38 providers included in the study: mean age and frequency distributions of age and gender were computed.

(b) Training: the following were assessed in the analysis: the proportion of these 38 clinicians that had been formally trained in STI management; the proportion of these 38 clinicians who were providing STI care and the mean duration since training.

(c) Knowledge: descriptive analysis was done to assess the proportion of providers who stated the correct drug, dose, duration and frequency of dosing for the various STI syndromes. Cross tabulations were also done to analyse providers' knowledge of clinical management of STI, comparing those trained to those untrained in STI care.

2.6.3 The patient record as the unit of analysis

Descriptive statistics were used to assess clinician's adherence to syndromic guidelines when prescribing treatment for STIs. The proportion of STI patient records that reflected the correct/incorrect management (according to guidelines) with regards to drug type, dose, frequency and duration of treatment was determined.

STI patient records were analyzed further by assessing the individual parts of the prescription (drug type, dose, frequency and duration) that were adherent to the guidelines. The following proportions were determined:

- proportion of all prescriptions with correct drug prescribed
- amongst those prescriptions with the correct drug, the following were assessed:
    - proportion with dose correct
    - proportion with frequency correct
    - proportion of prescriptions with duration correct
    - proportion of prescriptions with all above components correct
- proportion of prescriptions with drug, dose, frequency, and duration incorrect

Adherence was measured using The Diagnosis and the Management of STI in Southern Africa guidelines; 2000. Adherence was defined as: all parts of the prescription (drug type, dose, frequency and duration) were correctly prescribed in accordance with syndromic guidelines. If one part of the prescription was incorrect then it was considered to be incorrect practice (or non-adherence).

2.6.4 Ethical considerations

The ethics issues were at an individual and institutional level.

(a) Individual level

The Professional Nurses and Medical Doctors were informed about the study verbally and by means of a participant information sheet so as to get written informed consent to interview them. They were also informed that they have got the right to refuse to participate in the study or to withdraw from the study without any penalty. An explanation was given that the information obtained will be treated with utmost confidentiality. Furthermore no names were required on the questionnaire, as codes or numbers were used instead to maintain anonymity. Data will be aggregated and not by individual or facility level. Benefits will be spelt out to them.

(b) Institutional level

Clearance was obtained from the Committee for Research on Human Subjects (Medical) of the University of the Witwatersrand. Permission was obtained from the Gauteng Department of Health as well as permission to access the PHC facilities and use client records at the facilities from the Facility Manager. Facilities were identified with a code only on the questionnaire.

Protocol number: M 050930

Chapter Three Results

This chapter presents the findings of the study that was conducted in 22 clinics in three regions (sub-districts) in the Johannesburg Metro District of Gauteng province, South Africa. The data is presented in terms of the study objectives. Data is presented at 3 levels of analysis; the first part of this chapter presents data on the health facility level; the second part presents data from interviews with a sample of providers at the facilities; and the third part presents data from review of STI patient records.

The three regions included in the study are as follows:

Region	Region 3	Region 8	Region 10
Type of environment	Suburb	Inner-city	Township/Peri-urban
Number of clinics included in the study	4	8	10

3.1. Description of facilities included in the study

There were 22 facilities distributed across the 3 regions; the distribution of providers and facilities per region is summarized in Table 3.1. The number of STI clients that were seen per month per facility ranged from 1-826; the maximum was 826 in region 8 with a mean of 173 clients per month. On average staff patient ratio per month for all three regions was 29 STI patients per provider, but this varied across the three regions (Table 3.1).

Table 3. 1 Clinicians and facilities: Johannesburg Metro regions 3, 8, 10: 2006

Description	Region 3	Region 8	Region 10	All regions
No of fixed primary care facilities	4	8	10	22
No of clinicians working in these facilities	18	34	79	131
No of STI clients (March 2006)	306	1803	1688	3797
No. of STI clients (March 2006) - Mean - Range (range per clinic)	 76.5 13 - 137	 225.4 1 - 826	 168.8 17 - 305	 172.6 1 - 826
Staff workloads: No. of STI patients per clinician (March 2006)	17	53	21	29

3.2. Provider Training and knowledge of STI management

Thirty eight nurse providers who were on duty and providing STI services during the time of the study were interviewed. These represent 29% of all nurse providers working in clinics in the three regions. The results presented here include these providers' demographic profile, training in STI care, and knowledge of STI management.

3.2.1 Demographic profile

The total number of providers that were interviewed was 38, with a mean age of 44 years. The majority of these were female providers, and there were only 4 male providers in the study in the 3 regions (Table 3.2).

Table 3. 2 Demographic profile of the sample of STI providers in the 3 regions

Description	Region 3	Region 8	Region 10	All regions
No of providers interviewed	8	13	17	38
Age of providers (years)				
Mean (standard deviation)	46 (11)	39 (8)	47 (6)	44 (8)
Range	33-68	30-52	36-59	30-68
Sex				
Female	6	13	15	34
Male	2	0	2	4
Total	**8**	**13**	**17**	**38**

3.2.2 Training

Of the 38 providers that were interviewed, 29 (76%) were trained in STI management (Table 3.3). Half of these had received their training > 4 years prior to this study. Providers were trained 1 to 17 years prior to this study, with a mean duration of 4 years. All interviewed providers in region 3 were trained in STI management, whereas 8 of 13 providers in region 8 and 13 of 17 providers in region 10 were trained in STI management. None of the providers had received ongoing in-service training.

Table 3.3: A summary of trained and untrained providers in the 3 regions

Description	Region 3	Region 8	Region 10	Total
Training in STI management				
No of staff trained in STI management	8	8	13	29
No of staff not trained in STI management	0	5	4	9
Total	**8**	**13**	**17**	**38**
Duration since training	**n=8**	**n=8**	**n=13**	**n=29**
Median duration since trained in STI management (years)	5	2	4	4
Range (years)	1-17	1-17	1-16	1-17

3.2.3 Knowledge of STI management

Overall, providers had much better knowledge regarding the management of penile discharge and genital ulcer than management of vaginal discharge (Tables 3.4 and 3.5). The proportion of providers who had knowledge regarding management of vaginal discharge was almost equal to those who did not have knowledge (Table 3.4).

Table 3. 4: Provider knowledge of clinical management of vaginal discharge

		Region			
		3	**8**	**10**	**Total**
Management of syndrome: vaginal discharge		No. (%)	No. (%)	No. (%)	No. (%)
Name of drug	Correct	8(100.0)	12 (92.3)	14 (82.4)	34 (89.5)
	Incorrect	0 (0.0)	1 (7.7)	3 (17.6)	4 (10.5)
	Total	**8**	**13**	**17**	**38**
Amongst those who stated drug name correctly		N=8 No. (%)	N=12 No. (%)	N=14 No. (%)	N=34 No. (%)
Dose	Correct	8 (100.0)	11 (91.7)	14 (100.0)	33 (97.1)
Frequency	Correct	7 (87.5)	9 (75.0)	9 (64.3)	25 (73.5)
Duration	Correct	7 (87.5)	9 (75.0)	13 (92.9)	29 (85.3)

Concerning the management of penile discharge, providers were knowledgeable regarding drug type, dose, and frequency. Providers were less knowledgeable on the duration of treatment; 37 (97.4%) providers stated the incorrect duration of treatment and 1 (2.6%) provider was correct (table 3.5).

Table 3. 5 Provider knowledge of clinical management of penile discharge

		Region			
Management of syndrome: penile discharge		**3**	**8**	**10**	**Total**
Name of drug	Correct	8 (100.0)	12 (92.3)	17 (100.0)	37 (97.40
	Incorrect	0 (0.0)	1 (7.7)	0 (0.0)	1 (2.6)
	Total	**8**	**13**	**17**	**38**
Amongst those who stated drug name correctly		N=8 No. (%)	N=12 No. (%)	N=17 No. (%)	N=37 No. (%)
Dose	Correct	8 (100.0)	12 (100.0)	17 (100.0)	37 (100.0)
Frequency	Correct	7 (87.5)	11 (91.7)	15 (88.2)	33 (89.2)
Duration	Correct	8 (100.0)	12 (100.0)	17 (100.0)	1 (2.60)

The majority of providers (n=30; 79%) knew the correct drugs for the management of genital ulcer, this ranged from 75% (n=6) in Region 3 to 82% (n=14) in Region 10. Table 3.6 shows that majority of the providers knew the correct dose, this ranged from 100% (n=6) in region 3 and 8 to 77% (n=10) in region 10. .

Table 3. 6 Provider knowledge of clinical management of genital ulcer

		Region			
Management of syndrome: genital ulcer		**3**	**8**	**10**	**Total**
Name of drug	Correct	6 (75.0)	10 (76.9)	14 (82.3)	**30 (78.9)**
	Incorrect	2 (25.0)	3 (23.1)	3 (17.7)	**8 (21.1)**
	Total	**8**	**13**	**17**	**38**
Amongst those who stated drug name correctly		N=6 No . (%)	N=10 No. (%)	N=14 No. (%)	**N=30 No . (%)**
Dose	Correct	6 (100.0)	10 (100.0)	11 (78.6)	**27 (90.0)**
Frequency	Correct	5 (83.3)	9 (90.0)	10 (71.4)	**24 (80.0)**
Duration	Correct	5 (83.3)	7 (70.0)	6 (42.9)	**18 (60.0)**

Table 3.7 shows the comparison of knowledge of STI management between trained and untrained providers. It shows that overall, providers' knowledge varied by syndrome type; it was highest for penile urethral discharge and lowest for management of pregnant women with PVD. In total, 83% (n=24) of trained providers and 100% (n=9) of untrained providers knew the correct syndromic management of penile urethral discharge and 17% (n=5) of trained providers did not. However 78% (n=7) of untrained providers were knowledgeable in managing vaginal discharge, compared to 59% (n=17) of trained providers. Both trained and untrained providers were not knowledgeable in managing both genital ulcers and pregnant women with PVD (Table 3.5).

Table 3. 7 Provider knowledge of treatment for STI syndromes: trained and untrained STI providers in all regions

Provider correctly states STI syndromic management for:*	**Trained (n=29) No. (%)**	**Untrained (n=9) No. (%)**	**Total (n=38) No. (%)**
Penile urethral discharge			
Yes	24 (82.8%)	9 (100.0%)	33 (87%)
No	5 (17.2%)	0 (0.0%)	5 (13%)
Vaginal discharge			
Yes	17 (58.6%)	7 (77.8%)	24 (63%)
No	12 (42.4%)	2 (22.2%)	14 (37%)
Genital ulcer			
Yes	13 (44.8%)	2 (22.2%)	15 (39%)
No	16 (55.2%)	7 (77.8%)	23 (61%)
Pregnant with PVD			
Yes	10 (34.5%)	4 (44.4%)	14 (37%)
No	19 (65.5%)	5 (55.6%)	24 (63%)

*Correctly states the drug type, dose, frequency of dosing and duration of treatment

3.3 Adherence to STI Management Guidelines

A total of 210 client records were reviewed to determine provider adherence to STI syndromic guidelines when prescribing drugs for the treatment of STI syndromes. The 210 records were for patients who had been treated at the 21 clinics for the following STI syndromes: vaginal discharge (75), penile discharge (50), pelvic inflammatory disease (21), genital ulceration disease (18), genital warts (5), other for example inguinal buboes and genital scabies (41).

Table 3.8 shows that in all three regions, more STI records showed correct STI management (i.e. correct drug, name, dose, frequency of medication, and duration of course of treatment) than those that did not. Overall there were 148 (70%) records that showed adherence to STI syndromic management guidelines in all three regions, and only 62 (30%) records were non-adherent.

Table 3.8: Adherence of drug prescriptions to STI management guidelines

Description	Region 3 No. (%)	Region 8 No. (%)	Region 10 No. (%)	All regions No. (%)
Prescriptions that were adherent to STI guidelines	27 (65.7)	57 (81.4)	64 (64.0)	148 (70.5)
Prescriptions that were non-adherent to STI guidelines	13 (33.8)	13 (18.6)	36 (36.0)	62 (29.5)
Total	**40 (100)**	**70 (100)**	**100 (100)**	**210 (100)**

Figure 3.1 shows that, for all STI syndromes overall, most clients records (81%) showed that the correct drug had been prescribed as per syndromic management guidelines. Amongst those prescriptions with the correct drug, 85% of them had the correct dosage, 67% frequency and 54% duration of treatment (Figure 3.1).

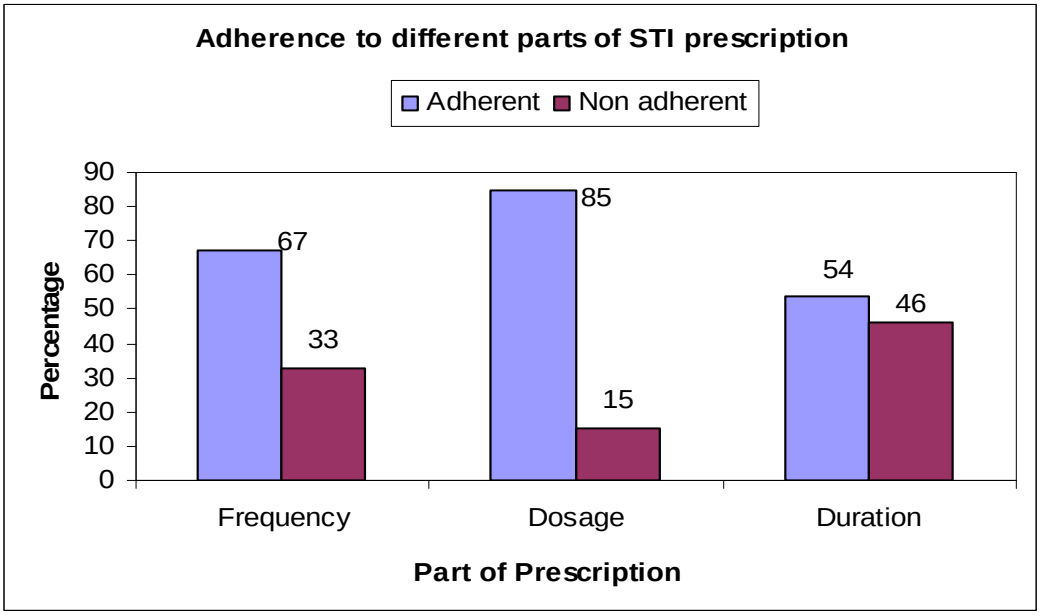


Figure 3.1 Prescriptions that were adherent to STI syndromic management guidelines (n=170)

An assessment of prescriptions for the management of vaginal discharge and penile discharge only was done. Table 3.97 shows that of 75 prescriptions for vaginal discharge, the vast majority (n= 62; 83%) had prescribed the correct drug; however, only 23 (31%) had prescribed all four parts (drug, dosage, frequency, and duration) of the STI treatment correctly. Out of 50 prescriptions for penile urethral discharge, just over half (n=26; 52%) reflected the correct drug, and in total, only 26 (52%) had all the parts of the prescription correct according to STI syndromic guidelines (Table 3.9).

Table 3.9: Prescriptions for treatment of vaginal discharge and penile urethral discharge that were adherent to syndromic management guidelines

Parts of a prescription that were adherent to syndromic guidelines*	No. of prescriptions	Percent
Vaginal discharge N=75		
Correct drug	62	83%
All parts (drug, dose, frequency and duration) correct	23	31%
Drug, dose, frequency and duration all incorrect	3	4%
Penile discharge N=50		
Correct drug	26	52%
All parts (drug, dose, frequency and duration) correct	26	52%
Drug, dose, frequency and duration all incorrect	2	4%

*Parts assessed: drug type, dose, frequency of dosage, and duration of course

Chapter Four Discussion

This chapter presents the discussion of the results for this study that was conducted in a sample of 22 PHC facilities in 3 regions in the Johannesburg Metro District to assess STI services, with particular focus on clinicians' knowledge and practice of syndromic management of STIs. The discussion includes the major findings of the study; consideration of the major findings in the context of the literature; and study limitations. Only the results of the prescriptions for vaginal discharge, penile discharge and genital ulcers were included in the study because these are the most prevalent sexually-transmitted diseases that are seen by the providers.

The study found that 76% (n=29) of providers were trained in STI syndromic management in all 3 regions. Overall most providers had knowledge of STI management. Knowledge was highest for management of penile discharge (n= 33; 87%) followed by vaginal discharge (n= 24; 63%) and management of genital ulceration and pregnant women with vaginal discharge was poor. Though numbers were small, the proportion of trained providers who knew the correct treatment of vaginal discharge was 58, 6% (n=17) compared to 77.8% (n=7) of untrained providers. Also for genital ulcers 44, 8% (n=13) trained providers knew management of genital ulcers compared to 22, 2% (n=2) of untrained providers. Concerning providers prescribing practices, the study found that overall across regions only 70% (n=148) of prescriptions showed full adherence to STI guidelines. This is despite the availability of syndromic guidelines in the clinics. These findings are discussed below in greater detail and in the context of the literature.

4.1 Clinicians knowledge and training

In this study, of 38 providers that were interviewed, 29 were trained in STI management and 9 were not trained but were providing STI services to clients. Though numbers were small and the study not powered to identify differences in knowledge by training, a comparison of knowledge between trained and untrained providers did not demonstrate that those who were trained necessarily had higher knowledge. For example 78% (n=7) of untrained providers were knowledgeable in managing vaginal discharge compared to 59% (n=17) of trained providers and all untrained providers were knowledgeable in managing penile discharge compared to 83% (n=24) of trained providers. This suggests that training in STI management did not necessarily result in better management of STI in this setting.

Reasons for these differences were not identified in this study. Further research is required to validate these findings on a larger sample. However, it was noted that overall, the median number of years since the 29 trained providers received their training in STI management was 4 years (range: 1-17 years); and that they did not receive any ongoing in-service training. It is also possible that other factors such as years of experience and use of guidelines rather than training could be more important factors influencing knowledge. So, it is possible that untrained providers could have been more experienced in STI management than the trained staff. Furthermore untrained staff could have been using the STI management guidelines frequently when prescribing because they did not attend any formal training, and as a results may have gained more knowledge in this way. Also, this study did not assess the nature and content of the training, and whether they have been providing STI care since their training.

Further study is therefore recommended to assess the impact of STI training on knowledge and clinical management.

The study also found that providers had better knowledge regarding the syndromic management of penile discharge and vaginal discharge than management of genital ulcers. The reason why providers had better knowledge regarding management of penile discharge could be that penile discharge is the common syndrome (Ballard et al, 2000), it is treated with few drugs and therefore it could have been easier to remember and state the correct treatment. The treatment for Genital ulceration syndrome is not complicated and it is treated with few drugs, but it is less common, (Ballard et al, 2000) and this may have affected recall.

Knowledge and training is important because unless providers are knowledgeable they won't know how to treat the STI correctly (Kamonga et al). This may result in poor management of STIs thus impacting on HIV control from the public health point of view. The National STI Initiative found that the clinical and management skills in STI care often fall short of standards, resulting in many clients being incorrectly treated. It was suggested that training in STI clinical case management is still essential and that efforts to ensure that every primary level clinical provider knows and understands the syndromic case management protocols needs to continue (Lehmann & Sanders, 2002). Further study is therefore recommended to assess the impact of STI training on knowledge and clinical management.

A similar study that was conducted in Karachi, Pakistan confirmed that specialists were consistently more likely to answer interview questions in accordance with international guidelines for diagnosis and treatment of STIs than were general practitioners. However, even amongst specialist, less than half were able to correctly

state the dose and duration of antimicrobial treatment for common STIs (Khandwalla et al, 2000).

Though our study was not powered to asses differences between trained and untrained providers, our results differ from those found in a study that was conducted in Abidjan whereby health care providers who recently received STI training scored significantly better than providers who did not (Vuylsteke et al, 2004). The reason why trained providers had better knowledge in this study could be that those providers had been recently trained unlike the findings from our study whereby providers were trained about 4 years back. Furthermore in Rwanda nurses were able to utilize syndromic management guidelines adequately with post training supervision and a high clinical improvement was achieved (Steen et al, 1998). The importance of syndromic management training is also emphasized by the study that was done at Pokhara, Nepal, whereby pharmacists were poorly managing STI clients because the training they received was not sufficient to improve their practice to acceptable quality (Khan et al, 2005).This may indicate that lack of knowledge of what to prescribe and staff not using or did not know how to use protocols in their consultation rooms could be due to lack of training.

In a study that was conducted in a mining community in Caltornville South Africa, the study found that despite administration of the periodic presumptive treatment (PPT) for bacterial STIs among sex workers over a period of 18 months and training of providers for improved STI services, the prevalence of STIs amongst sex workers, mine workers and men in the community remained constant or slightly increased. Despite the fact that providers received training on PPT clients were poorly managed. This shows that there remains room for improvement in the quality of treatment of

STIs in both public and private sector; furthermore training is essential in treatment for all STI syndromes (Ndhlovu et al, 2005).

4.2 Clinicians adherence to syndromic guidelines in managing STIs

The study found that 70% (n=148) of prescriptions for treatment of STIs were adherent to STI guidelines and 30% (n=62) records were non-adherent. This indicates that overall, majority of providers were complying to guidelines when prescribing STI treatment. However the 30% (n=62) of records that were non-adherent suggests that almost one third of clients in these health facilities may not be receiving the appropriate treatment for STI as per national guidelines. This demonstrates that there is still room for improvement as it should be 100%.

It is difficult to judge whether 70% (n=148) is sufficient or not because in South Africa there are no standards about acceptable level of adherence. However this 70% is better than compared to China. In Hanoi 82% of patients were treated and only 1,5% of the regimen given conformed to national guidelines (Chalker et al, 2000). In addition it is not good enough especially that only 31% (n=23) of women with vaginal discharge were properly managed and only 52% (n=26) penile discharge patients were properly managed. The implications for STI control may be that we may not be able to achieve the NSP goals and there could be a waste of resources. In addition non-adherence may be related to factors such as lack of training and ongoing in-service education. This issue is a big challenge as adherence to clinical guidelines is notoriously difficult to achieve, even when intensively promoted (Mak & Holman, 2000).

Regarding parts of the prescriptions, while the majority of prescriptions (n=62; 83%) for treatment of vaginal discharge had the correct drug, only just over half (n=26;

52%) of prescriptions for penile discharge had the correct drug. This is interesting because while providers had better knowledge of the correct drug for the treatment of penile discharge, in practice it was the other way around. In addition regarding adherence to managing vaginal and penile discharge syndromes the study showed poor adherence to guidelines as only 31% (n=23) of prescriptions for vaginal discharge and 52% (n=26) for penile discharge were entirely correct (correct drug name, dosage, frequency, duration). This indicates that a significant number of clients are receiving inappropriate STI treatment and it raises concerns because the poor management of STI has impacts the ability of the STI control program to achieve success.

This study suggests that providers are not using the guidelines when they are prescribing medication. The reasons for poor prescribing habits despite availability of treatment protocols in consultation rooms and relatively high knowledge are unclear and could not be identified because data on characteristics of prescribers was not collected; the providers who were interviewed may not have been the same providers who prescribed STI treatment on the records that were reviewed. It could be the issues regarding training discussed previously: providers received their training several years ago and also the lack of on-going in-service training. Although some studies indicate a need for provider training, other studies have shown that clinicians' knowledge does not assure practice consistence with recommended guidelines (South Med J, 2001).

In another study that was conducted in Canada, adherence to the CDC guidelines did not vary significantly by clinician type or clinician specialty (Magid et al, 2002). This indicates that irrespective of additional training that was received by specialists adherence was the same. Therefore this study emphasizes the results of the above

Canadian study that there could have been other reasons why providers were not adherent to guidelines.

A study that was done in Botswana found that providers had not prescribed metronidazole, although the availability of drugs was excellent in Botswana. This finding was consistent with another study on quality of STI management from primary health care in Botswana that showed substantial flaws in history taking, clinical examination and prescribing of drugs (Boonstra et al, 2003). In another study that was conducted in Hanoi, of all patients that were treated, only 1, 5% of the regimens prescribed conformed to national guidelines. (Chalker et al, 2000). Similarly, in a study in the Eastern Cape using the DISCA tool, it was found that only 26% of clients were correctly treated for STI, which is a very low figure indeed (Mullik et al, 2001).

The above indicates that adherence to clinical guidelines becomes difficult to achieve even when it is intensively promoted (Romen et al, 2007). Further research is needed to find out the factors that influence prescriber adherence to treatment guidelines in the Johannesburg Metro context.

Therefore the study supports the others that provider interview strongly overestimates correct performance and is not a suitable method for studying the actual performances of health service providers (Khan et al, 2005).

4.3 Provider (clinicians) workloads at PHC

The study found that region 8 had higher staff workloads of 53 patients per provider and region 3 had 17 patients per providers and region 10 had 21 patients per provider. It appears that region 8 had more workloads comparing it with the other regions.

The reasons that hinder the provision of good quality of health care are is high patient work load due to shortage of staff, because providers focus on quantity and this comprises the quality of care. Workloads, particularly at the PHC facilities, continues to be a controversial issue because facilities are not supposed to turn patients away but at the same time facilities are short staffed and are faced with very high workloads. HIV epidemic attributes to the high workloads that the clinics are experiencing. The study showed that region 8 which is the inner-city region had high STI workloads of 53 patients per provider relative to region 3 and region 10. In this study only number of patients seen at the facility per day was used to determine workloads.
A study on the cost and efficiency of public sector sexually transmitted clinics in Andhra Pradesh, India, high numbers of STI patients were treated at two district headquarter hospital STI clinics and high number at one area hospital STI clinic per full time doctor equivalent available suggests that the need to ensuring quality of care must be emphasised, assuming that quality is impaired by an excessive caseload (Dandona et al, 2005). In general this study showed that higher workloads reduced efficiency.

According to a PHC survey published in the South African Health review of 2002 (Lehmann & Sanders, 2002), health managers considered a range of between 20 and 35 patients per day (per provider) to be appropriate. However it is not uncommon to find services where nurses consult an average of 6 patients a day or 60 patients a day on a routine basis. Moreover workload is not only a question of individual nurse's efficiency and productivity although these are undoubtedly contributing factors that need to taken into account. Rather workload is quite fundamentally determined by dramatic structural differences, such as location, size, staffing level, infrastructure and resources (Lehmann & Sanders, 2002). In our study the number of patients per

provider in region 8 was high (53) according to the PHC survey, therefore this would be considered to be inappropriate workload. Further research might be done to look at the other activities that are considered to be staff workloads that the providers spend hours performing like administration work etc.

4.4 Bias and Limitations

The results of this study should be interpreted in the context of a number of limitations. One of the study limitations was that interviews were conducted with only 38 providers and no clinical observations or clients exit interviews were done to verify providers' knowledge. Another study might be done to look at conducting exit interviews and observing the providers during the consultation process.

The study was conducted in 22 facilities of Johannesburg Metro mainly focusing only on 3 regions. Since this sample was purposively selected to reflect the various socio-economic residential groupings in the Metro, this is a potential selection bias. This means that the results of the study may are not be generalisable to the whole district.

A more representative study might be required to cover all the regions in the Johannesburg Metro so that all the regions are represented and to reflect clinicians' knowledge and practices across the Johannesburg Metro district.

Chapter Five Conclusion and Recommendations

5.1 Conclusion

Knowledge of STI management was high even amongst untrained providers particularly in managing penile discharge. This point out to the fact that; training in STI management in this setting did not necessarily results in better knowledge of STI management guidelines in this setting.

Despite the availability of treatment protocols or guidelines in consulting rooms, 70% of the drug regimens prescribed were adherent to STI guidelines and 30% of prescriptions for treatment of STIs were non-adherent to syndromic guidelines. This is encouraging, but still leaves a lot of room for improvement, particularly for the treatment of vaginal discharge, which was particularly poor.

Public health implications: a lot still need to be done with STI control because it impacts on prevention of HIV efforts. Emphasis should be given on training all health care providers in syndromic management; and it is very crucial for the district to offer continuous in-service training and supervision with STI management

The results of this study though not generalisable to the whole Johannesburg Metro district, are of relevance to the selected 3 regions. The findings however are useful to give some sense of quality of STI services at regional and facility level; and the findings highlight that there may be differences between regions which need further exploration. It is hoped that this information will be used by the district to better address the issue of quality STI services and further studies commissioned. In addition attention to quality STI services should continue to be the key focus in the district.

The results of this study demonstrate that there is still considerable scope for improvement of STI management in the selected regions. Proper STI management should be of high priority for the prevention of HIV infection.

5.2 Recommendations

In general dealing with a ever increasing workload does lead to compromising clinical care and also the study suggested the same. Although efforts were being made to train providers in STI management the study suggested that training does not necessarily result in better management of STI.

Provider training and on-going in-service training are recommended to provide updates to providers. However, training alone might not guarantee proper STI management. Therefore continuous management and support including regular supervisory visits particularly from the HIV/STI coordinators is crucially important to health personnel. Good support will increase the staff performance and motivation, and therefore staff will be able to function efficiently and according to the expected standards (Vuylsteke et al, 2004).

Regular monitoring and evaluation systems using the DISCA tool needs to be developed and implemented at all PHC facilities to ensure that issues that affect quality care are identified and managed, such as capacity and skills; workloads; management; support and supervision.

REFERENCES

Ballard R, Htun Y, Fenhler G, Neilson G, 2000. The diagnosis and management of Sexually Transmitted Infections in Southern Africa. 3rd Edition 2000 pp 3-10.

Boonstra, M. Lindbæk, E. Klouman, E. Ngome, M. Romøren, J. Sundby. 2003 Syndromic management of sexually transmitted diseases in Botswana's primary health care: quality of care aspects. Tropical Medicine & International Health. Volume 8 pp 604.

Chalker J, Chuc N, Falkenberg T, Do N, Tomson G. 2000. STD by private pharmacist in Hanoi: practice and knowledge of drug sellers. Sexual Transmitted Infection 2000; 76; 299-302

Conolly A, Wilkinson D, Harrison A. 1999. Inadequate treatment for Sexually Transmitted Diseases in South African private sector. Int J STD AIDS1999.

Dandona L, Sisodia P, Prasad T, Marseille R, Anod Kumar A, Prem Kumar S, Ramesh Y, Someshwar M, Kahn J. 2005 Cost and efficiency of public sector sexually transmitted clinics in Andhra Pradesh, India. BMC Health Service Research v.5; 2005. (PubMed Central)

Department of Health, South Africa. Training Manual for the management of a person with a STI for Health Providers. Department of Health 1998.

Department of Health South Africa. Quality of health care (Discussion paper). Health Summit Section 2A 2001.

Department of Health, South Africa. Demographic Health Survey, South Africa: Department of Health 1998.

Department of Health, South Africa. HIV/AIDS and STD Strategic Plan for South Africa 2000-2005. South Africa, Pretoria: Department of Health 2000.

Department of Health, South Africa. HIV & AIDS and STI Strategic Plan for South Africa 2007-2011. South Africa, Pretoria: Department of Health 2007.

Grosskurth H, Mosha F, Todd J 1995. Impact of improved treatment of Sexually Transmitted Diseases on HIV infection in rural Tanzania: randomized control trial. Lancet, 1995 August 26. 346 (8974): 5306

Kamoga. N, Sonko, R. 2003. Assessing the adequacy of training undergraduate Medical Doctors in management of Sexually Transmitted Infections in South Africa. Report Health System Trust August 2003.

Khandwalla H, Luby S, Rahman S. 2000. Knowledge, attitudes, and practices regarding Sexually Transmitted Infections among general practitioners and medical specialist in Karachi, Pakistan. Sexual Transmitted Infection 2000; 76; 383-385.

Katzenellenbogen J., Joubert G., Abdool Karim S. Epidemiology. A manual for South Africa. Oxford University Press Southern Africa 1997. pp75-76.

Khan M, Wolter S, Mori M. 2005. Post training quality of syndromic management of Sexually Transmitted Infections by druggist and chemist in Pokhara, Nepal: is it satisfactory. International Journal for Quality in Health Care; Volume 18, Number1 pp 66-72.

Lehmann U., Sanders D. South African Health Review; Human Resource Development 2002. Health Systems Trust, Durban.

Mak D and Holman C. 2000. STDs aren't sexy: health professionals lack of adherence to clinical guidelines area of high STD endemicity. J Public Health Med; 22: 540-5

Magid D, Stiffman M, Anderson L, Kathleen I, Lyons E. 2003. Adherence to CDC STD guidelines recommendations for the treatment of Chlamydia trachomatis infection in two managed care organizations. Journal of the American Sexual Transmitted Diseases Association: Volume 30 (1) January 2003 pp 30-32.

Moys A. 2002. A practical Guide to Using the District STI Quality of Care Assessment. Health Systems Trust. Durban.

Mullick S., McCoy D., Beksinska M., Moys, A. 2001. Evaluating the Quality of Care for Sexually Transmitted Infections using DISCA, (District STI Clinic Assessment). Health Systems Trust.

National Department of Health. Protocols for the management of a person with Sexually Transmitted Diseases according to the Essential Drug List. Pretoria: Department of Health 1998.

Ndhlovu L, Searle C, van Dam J, Mzaidume B, Moema S. 2005. Reducing transmission of HIV and Sexually Transmitted Infection in a mining community. Findings from the Carltonville Mothusimpilo intervention project: 1998 to 2001 "Horizons Final Report. Washington, DC: Population Council.

Pepin J, S Deslandes, N Khonde, D F Kintin, S Diakite, M Sylla, H Meda, F Sobela, C Asamoah-Adu, T Agyarko-Poku, and E Frost. 2004. Low prevalence of cervical infections in women with vaginal discharge in West Africa: implications for syndromic management. Sex. Transm. Inf., June 1, 2004; 80(3): 230 - 235.

Plummer D. 2003. Designing Effective STI Strategies. (Discussion paper). Australian National Council on AIDS, Hepatitis C and Related Diseases. School of Health University of Hew England; July 2003. England.

Ramkissoon A, Kleinschmidt I, Beksinka M, Smit J, Hlazo J, Mabude Z. National Baseline Assessment of Sexually Transmitted Infection and HIV services in South

African public health sector facilities 2002/2003: Summary Report 2004. RHRU 2004.

Steen R, Soliman C, Mujyambwani P. 1998. Notes from the field: practical issues in upgrading STD services based on experience from primary health care facilities in two Rwandan towns. Sexually Transmitted Infections 1998 June: (74 Suppl 1): S159-65.

Sonko R, McCoy D, Gosa E, Hamelmann C, Chabikuli N, Moys A, Ramkissoon A, Hlazo J. 2003. An Overview of Issues on Sexually Transmitted Infection Management and Control in South Africa. Research Report. Health Systems Trust.

Thomas R and William 1997. The Hidden Epidemic: Confronting Sexually Transmitted Diseases. Committee on Prevention and Control of Sexually Transmitted Diseases: Institute of Medicine. National Academy Press: Washington, D.C.

Vuylsteke B, Traore M, Mah-Bi G, Konan Y, Ghys P, Diarra J, Laga M. 2004. Quality of Sexually Transmitted Infections services for female sex workers in Abijan, Cote d'Ivoire. Tropical Medicine and International Health; 9 no 5 pp.638-643 May 2004.

Wilkinson D, Ramjee G, Sturm A, Abdool Karim S 1997. Reducing South Africa's hidden epidemic of sexually transmitted infections. Policy brief number 6. Medical Research Council, South Africa.

World Health Organisation. Global prevalence and incidence of selected curable sexually transmitted diseases. Epidemiological Bulletin: overview and estimates 1998. Geneva: World Health Organization.

World Health Organization. Management of patients with sexually transmitted diseases. WHO Technical Report Series No. 810 1991 Geneva: World Health Organization.

APPENDIX A: DATA COLLECTION TOOL[1]

[1] Abbreviated from the District STI Quality of Care Assessment (DISCA)

Assessment of clinician knowledge and practices in the management of sexually transmitted infections in Johannesburg Metro

Province: ……. Sub-district: ……

Facility Code: …….

Date of visit: …../…../…… Time of visit: ……h……..

Instructions:

Please fill out this data collection tool by:
1. Interviewing the Facility Manager (Sections 1 and 2)
2. Examining the patients records (Section 3)
3. Interviewing clinicians (Sections 4, 5 and 6)

SECTION 1: STAFF TRAINING

Interview the facility manager:

NUMBER

a. What is the total number of clinicians working at this facility?

Doctors: ……

Professional nurses: ……

b. How many of the clinicians who are working here have been on a formal training course in STI management?

Doctors: ……

Professional nurses: ……

c. How many clinicians who are working here have been on a formal HIV/AIDS counseling course?

Doctors: ……

Professional nurses: ……

d. How many clinicians who are working here provide STI management in this facility?

Doctors: ……

Professional nurses: ……

SECTION 2: CASELOAD

Please request a patient register and record the following figures for the last month:

a. Total number of clients seen ……..

b. Total number of adult clients (15 years or older) ……...

c. Total number of clients with an STI ……

SECTION 3: STI DRUGS AND APPROPRIATENESS OF PROVIDER TREATMENT OF STIS (review 10 most recent records)

STI Patient folders	Was diagnosis according to syndromes (as below)? **Yes / No**	Specify syndrome **(as per codes below)**	What type of drug/s did the patient receive? **(type, dose, and duration)**	Is the drug prescription correct (according to guidelines)? **Yes/No**	Is partner Notification Issued **Yes/No**	RPR test Requested **Yes/No**
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Syndromic Codes: (to be used in the 2nd column above): **1**-Penile discharge **2**-Vaginal discharge **3**-Pelvic inflammatory disease
4-Genital Ulcers **5**-Genital warts **6**-Other STI (specify)

SECTION 4: PROVIDER KNOWLEDGE
(use a separate questionnaire for each provider

Clinic code: _____ Provider code: _____

1. Designation
1. Doctor
2. Professional Nurse

2. Sex
1. Female
2. Male

3. Age _____ (years)

4. Training
4.1 Have you ever attended a formal training course in STI management?
1. Yes
2. No (skip to 4.3)

4.2 If yes, when? _____ (year)

4.3 Do you treat patient with STIs in this facility?
1. Yes
2. No

5. Knowledge of STI management
Ask the clinician the following questions

NB: later: check the answer with STI management guidelines and code whether correct or incorrect

5.1 What drugs (type, dosage, frequency, and duration) would you use to treat:

(i) a man with penile urethral discharge?

……

……. correct incorrect

(ii) a woman complaining of a vaginal discharge?

……

…… correct incorrect

(iii) a man or woman complaining of a genital ulcer?

……..

…… correct incorrect

5.2. How would you treat a pregnant woman with a vaginal discharge?

…….

……. correct incorrect

5.3. If doxycycline was out of stock what would you use in its place for discharge? (give drug, dose, and duration)

……

…… correct incorrect

5.4. If you had a problem with STI management who would you consult?

(State name and designation of this person)…….....

6. Comments

What recommendations would you make to improve the management of STI in this facility?

……

……

……

…….

…….

APPENDIX B: Ethics Approval

file.

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Sibanyoni

CLEARANCE CERTIFICATE	PROTOCOL NUMBER M050930
PROJECT	Assessment of Clinician Knowledge and Practices in the Management of Sexual Transmitted Infections
INVESTIGATORS	Miss JM Sibanyoni
DEPARTMENT	School of Public Health
DATE CONSIDERED	05.09.30
DECISION OF THE COMMITTEE*	Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 05.10.25 CHAIRPERSON .....
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Dr M Kawonga

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and ONE COPY returned to the Secretary at Room 10005, 10th Floor, Senate House, University.
I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. I agree to a completion of a yearly progress report.

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES