Chapter 2

MATERIALS AND METHODS

2.1 Introduction

Health care facilities in informal settlements bordering the Northern suburbs of Johannesburg were selected. The informal settlements were selected on the basis of easy access and familiarity to the investigator. It was also a consideration that the facility selected for the study should be offering a wide range of services that would allow for diversity in prescribing patterns in terms of categories of health professionals the prescribing and the presenting conditions. Table 1 below shows the services rendered in the health care facilities selected for the study.

Table 1. Health Services Rendered in Health Care Facilities

Region 1					
Service	Name	Staffing	I	Services rendered	Hours
Clinic	O R Tambo Erf 383, Diepsloot Tel: 464- 7950	2 Prof nu 1 Driver	Jrses	Reproductive Health, Child Health, Communicable Diseases, Curative, Community Based Rehabilitation, Family planning, STDs, immunizations, well baby, PHC (adults and children), health education	Mon - Fri 8am - 4pm
Region 2					
Clinic	Bophelong Stand 3699Ivory Park Tel: 011 261 1212	Reproductive Health, Child Health, Communicable Diseases, Curative, Community Based Rehabilitation, Mental Health 1 Sessional Doctor (PHC) Once a week 1 Sessional Doctor (Psych) Once a Month 5 PHC Trained Sisters Clerk Health Promoter Cleaner GW HP		Monday and Wednesday: 6.45am to 7.45am - morning clinic 7.45am to 4.15pm Tuesday and Thursday: 7.45am to 4.15pm Friday: 7.45am to 12pm	
Clinic 5 PHC 2 GW 1 Clerk 1 HP	Hikhensile Stand 8786, Ivory Park Tel: 011 310 2147	Reproductive Health, Child Health, Communicable Diseases, Curative, Community Based Rehabilitation		Monday to Thursday: 7.45am - 4.15pm Friday: 7:45 to 12pm	
Region 5					
Clinic 1 (PHC) 1 (GW)	David Comm Cente Camp David Tel: 0 5932 Fax: 0 5932	sonville nunity r, bell St, sonville 11 763	Mother & Transmi Services Curative Health S Immuniz	& Child Health, Sexually tted Diseases, Curative for under 6 years, Adult Services, Reproductive ervices, Tuberculosis, zation	Monday - Thursday 8am - 4pm Friday 8am - 12pm 1st Tuesday of month: 4pm - 6pm for working mothers

Selected for the Study

Source: http://www.joburg.org.za/services/health1.stm

Although it is policy for prescriptions for primary health care services based on the EDL, it was envisaged that personal styles of prescribers as well as probable drug supply problems may influence prescribers to prescribe and dispense drugs that are not listed in the EDL.

A total of four facilities were selected for the study. In each facility a total of one hundred patient records were reviewed for ages of patients, diagnoses, prescription as well as the professional designation of the prescribing health care professional.

2.2 Study Site Description

The study was carried out at the in Four sites from three different regions of Johannesburg; The Davidsonville clinic which offers services to Emhlangeni and Mathole informal settlements was utilized as a representative of region 5, while data collected from O R Tambo clinic situated in Diepsloot was used as a representative of region 1 while data from Bophelong and Hikhensile clinics in Ivory Park informal settlement, were representative of region 2. The different regions of Joburg are shown in figure 4.



Figure 4. Map of Administrative Regions of the Greater

Johannesburg Metropolitan Area

(www.joburg.org.za/city_vision/coj-

report/cojMidreportMainChapter6.pdf)

Region 5 covers the greater Roodepoort, Randburg, Olivedale and Northriding areas of Johannesburg. Region 5 largely consists of prosperous residential areas, including some well known suburbs such as Allens Nek, Bromhof, Constantia Kloof, Fairlands, Honeydew, Northcliff and Randpark Ridge to name but a few. The Emhlangeni and Mathole informal settlements on the southern side of Roodepoort were established in the late 1990s and continue to grow year after year. Health services are rendered through one clinic and the majority of the settlement dwellers are poor and largely unemployed (CEROI, 2000).

Of the region's mature population of 225 000, 65% are economically active and about 24% are of school-going age. The majority of the adult population is in the middle to high-income bracket, with many young working individuals and small families. Close to 32% of the population have a post-matric qualification. However, the current community profile will change when Cosmo City and Zandspruit have been fully developed. It is expected that these changes will not be extreme but indicate a normalized community, representative of a greater spectrum of socio-economic groups (CEROI, 2000).

The Diepsloot region (region 1) shares Johannesburg's far northern boundary with Region 2 (Midrand), the two regions meeting more or less along the William Nicoll highway. In the south it borders on Region 3 (Sandton) and Region 5 (Roodepoort). To the west is the Krugersdorp area. The region is sparsely populated on the whole, with a dense focus in the Diepsloot settlement which is home to nearly 56 000 people. Of these, 27% fall within the 20-29 age group. Unemployment levels in the settlement are high at 53%, with 73% of households living below the poverty line. In contrast, just south of Diepsloot there is a highly affluent area dominated by the Dainfern suburb. Educational and living standards in the more prosperous areas are generally high.

The Midrand region (Region 2) is located on the north-eastern periphery of Johannesburg. In the south it is bounded Sandton/Randburg (Region 3) along part of the N1 highway which then turns north to slice through the region. To the south-west is Alex/Modderfontein (Region 7), and the western boundary is shared with Diepsloot (Region 1), the other northernmost region of the unicity.

The population is estimated at 200 000 and is relatively young with 20.4% being between the ages of 20 and 29. Although the formal residential areas are home to a well educated and prosperous population, the vast majority of Midrand's residents, mostly residing in the Ivory Park informal settlement and the newly developed Ebony Park are poor, with an average Grade 7 qualification. Approximately 70% earn less than R2 500 pm, and 34% of this category earn no income at all. The settlements are characterized by overcrowding, lack of proper infrastructure for roads, sanitation and water taps. Most of the units in the settlement are, however, electrified to a large extent.

This study aims to review the profiles of patients attending an informal settlement health facility in order to determine firstly, the \ patterns within the informal settlement, and secondly to ascertain whether the drugs listed in the EDL are adequate to address the presenting conditions at the primary health care level.

2.3 Methods

Four health facilities were selected from regions 1, 2 and 5 of the Joburg metro. In each facility a hundred patient records were reviewed

for different data sets. Demographic data of interest included age and sex. Clinical data collected included diagnosis where available or simply the presenting signs and symptoms. Pharmaceutical data collected included medication prescribed, whether medication was prescribed by brand or generic name and whether the medication is listed or not listed in the EDL (National department of Health, 1998).

Data from the four health care facilities was pooled for further analysis. The signs and symptoms were classified into major groupings according to the EDL classification. For example, epilepsy under central nervous system, ear nose and throat, for tonsillitis, ear infections, etc, cardiovascular to include hypertension, endocrine to include diabetes. eye conditions to include conjunctivitis. gastrointestinal to include diarrhea, epigastric pain, vomiting, etc, skin conditions to include eczema, skin or body rash, acne, boils and abscesses, respiratory to include cough, asthma, common cold and influenza and bronchitis and lastly infections were grouped to include sexually transmitted infections (STI), urethral discharge.

2.4 Study Design

A cross sectional descriptive study design was used. There are two main classes of study design; experimental and non-experimental. In an experimental study, conditions (usually the treatments) are under the direct control of the investigator. These studies test the effectiveness of a treatment or intervention by comparing the outcome (for example the frequency and intensity of a symptom) in the experimental group with the outcome in the control group. In a randomized controlled trial, individuals are randomly allocated to the groups.

Non-experimental studies observe something that occurs naturally. Descriptive studies describe patterns of disease, symptoms, or problems in a population. Analytic studies examine an association between a problem of interest and other variables, and possible causative factors are examined. These last groups include crosssectional, longitudinal, and case-control designs.

A cross-sectional study measures the prevalence of a symptom,

determinants of a symptom, or both, in a population at one point in time or over a short period of time. It provides a snapshot of the health experience of a population at a given time. Such information can be very useful in assessing the health status and needs of a population. It can also be used to study the relationship between variables (for example between breathlessness and lung metastasis). The prevalence of a problem, rather than the incidence, is recorded in a cross-sectional survey, and every association should be interpreted cautiously.

http://symptomresearch.nih.gov/chapter 19/sec8/cihs8pg1.htm

2.5 Sample Size Determination

The sample size of the study has been estimated using the following formula:

n = $(z/\Delta)^2 p(1-p)$, where is the proportion to be estimated, z = 1.96 for a 95% confidence interval and Δ = 0.05 to be within 5% of the true proportion.

= 385

This figure was rounded up to 400 records, no drop outs or none response could be possible as record review was under the investigator's control.

Inclusion criteria

Records of all patients visiting the health care facility at the time of visit were reviewed. Patients were given an information sheet that outlined the purpose of the study to read and requested to sign a written informed consent form to be included in the study. Minors were assisted in giving consent by an accompanying adult of their choice.

2.6 Results Analysis

2.6.1 Analysis of Demographic Patterns of Informal Settlements Health Care Facility Attendees

Demographic and clinical data collected was captured using a data collection form as shown in appendix 1. Furthermore, the data was entered into a Microsoft access database and analyzed using Epilnfo version 3.3. The data sets collected were; record number, age in years, clinical signs and symptoms, prescribed medication and the category of prescribing clinical staff. The age of the informal settlement health center attendees was grouped into five categories; 0 to 18, 19 to 35, 36 to 55, 56 to 75 and over. The mean age for either males or females in each category was reported as mean \pm Standard Deviation. Furthermore, the age distribution frequency was plotted as a percentage of the total number of cases recorded.

2.6.2 Analysis of EDL Compliance by Health Care Professionals

Prescribing patterns were established by calculating the frequencies of prescribed medication stratified by health care worker.

2.6.3 Analysis of Commonly Occurring Conditions

The most commonly occurring conditions were determined by calculating frequencies of all conditions that presented to the health care facilities studied.

2.6.4 Analysis of Commonly Prescribed Drugs

The most commonly prescribed drugs were determined by calculating the frequencies of drugs prescribed to informal health care facilities attendees.

2.7 Limitations of the Study

2.7.1 Selection Bias

Only patients visiting the health care facility on the days chosen by the investigator were included in the study because there are no facility kept records. All records are patient retained.

The investigator could only be at the facilities at set times which could lead to missing of patients coming in at other times. Also, the exclusion of incomplete records may have contributed to the selection bias.

2.7.2 Patient Mobility

Informal settlement dwellers are highly mobile and results obtained at the time of study may not necessarily be generalizable over the years.

2.7.3 Health Services Organization

The organization of health services did not necessarily flow in the way the investigator planned to make contact with the patients. In most facilities tuberculosis (TB) patients were seen in specialized area generally not accessible to the investigator. Furthermore, those patients coming in for voluntary counseling and testing (VCT) for HIV were not accessible to the investigator and could not form part of the study.