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EVALUATION OF REFERRAL SYSTEM IN THABA NCHU HEALTH SUB-DISTRICT AND DR. J.S MOROKA DISTRICT HOSPITAL

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

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DECLARATION

I, MONNAPULE ERIC MOJAKI, declare that this research report is my own work. It is being submitted for the degree of Master of Public Health (Hospital Management) at the University of Witwatersrand, Johannesburg. It has not been submitted before for any degree or for any examination at this or any other university.

……

September 2009

DEDICATION

I dedicate this work to:-

My wife and children for the kind understanding, support and motivation rendered throughout the period of my studies. I can never find words to thank you for your concern and encouragement on my progress with my studies.

My relatives for their warm support and making my studies easier by making my stay in Johannesburg during my class sessions homely.

Lastly my heartiest thanks to my late mother for the person that I am.

ABSTRACT

Introduction: South African health system embraces the District Health System model. [1] District health system includes health stations or posts, other health care facilities such as private health practitioners, community based organisations. primary health care clinics and district hospitals. District hospitals provide first level of outpatient or inpatient care for patients who have been referred by their primary care providers. District hospitals usually provide 24 hour care and are integrated into district health system. The above set up is similar in Thaba Nchu Health sub district where Dr.J.S.Moroka Hospital (DJSMH) is a district hospital and therefore, a referral point for 11 clinics within Thaba Nchu sub district and 4 clinics from the neighbouring sub district. In addition, there are 5 general practitioners rooms within Thaba Nchu sub district. The DJSMH is overburdened with increasingly high caseload.

Main Aim: To evaluate the referral system in the Thaba Nchu Health Sub-district, Free State Province in terms of the factors that influences its function.

Methodology: This was a descriptive study undertaken at Dr.J.S.Moroka Hospital Outpatient and Casualty departments. The study included review of routinely collected hospital information on patients' records and registers. No intervention was done for this study.

Results : The referral system within the sub district is not fully functional. Most patients that are seen in the DJSMH are self referrals. The case load and work load of the two designated areas could be reduced if most of the patients could have started and be seen at the primary health care clinics. Although the registers were helpful in collecting information, the documentation on patients' records by health workers is not consistent; it is poor and need to be improved. The records have shown that the personnel are doing little in strengthening the referral system within the district.

Conclusion: This study was the first of its kind to be done in this DJSMH. Although there are good practices with regard to referral system within the Thaba Nchu sub-district and Dr. J.S Moroka Hospital, much still has to be done to ensure that the primary health care clinics and hospitals are effectively functioning in rendering services relevant to each level of care. More patients seen in the DJSMH are self referrals that could be managed at the primary health care clinics. The interventions recommended in this study will assist in strengthening the delivery of district health care system and in particular improve the referral system within the sub district.

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GLOSSARY OF TERMS

Casualty Department [2]: Casualty Department (also called emergency department , emergency room, emergency ward, accident & emergency) is a hospital or primary care department that provides initial treatment to patients with a broad spectrum of illnesses and injuries, some of which may be life-threatening and requiring immediate attention.

District Hospital [3]: The District Hospital serves three critical roles in a well-functioning district health system, namely to: (a) provide support to health workers in clinics and community services, both in terms of clinical care and public health expertise (b) provide first level hospital care for the district and (c) be the place of referral from clinics and/or community health centers, and be responsible for referring patients

District Health System [4]: A District Health System based on Primary Health Care is a more or less self-contained segment of the National Health System. It comprises first and foremost a well-defined population, living in a clearly delineated administrative and geographical area, whether urban or rural. It includes all institutions and individuals providing health care in the district, whether governmental, social security, non-governmental, private or traditional. A District Health System therefore consists of a large variety of inter-related elements that contribute to health in homes, schools, work places, and communities, through the health and other related sectors. It includes self care and all health care workers and facilities, up to and including the hospital at the first referral level, and the appropriate laboratory, other diagnostic, and logistic support services"

ICD-10 code [5]: The ICD-10 code stands for International Classification of Diseases and related health problems - 10th revision. It is a coding system developed by the World Health Organization (WHO), that translates the written description of medical and health information into codes in a standardized format, e.g. J03.9 is an ICD-10 code for acute tonsillitis and G41.0 - Epilepsy, unspecified.

Out-patient Department [2]: An outpatient department is a hospital department which is primarily designed to enable consultants and members of their teams to see outpatients at consultant clinics. It consists of one or more consulting rooms and associated support accommodation, e.g. nurses station, treatment rooms, waiting areas.

Referral system [6]: It can be defined as any process in which health care providers at lower levels of the health system, who lack the skills, the facilities, or both to manage a given clinical condition, seek the assistance of providers who are better equipped or specially trained to guide them in managing or to take over responsibility for a particular episode of a clinical condition in a patient

LIST OF ABBREVIATIONS

DJSMH	DR. J.S. MOROKA HOSPITAL IN THE FREE STATE
ICD-10 CODES	INTERNATIONAL CODE OF DISEASE .10 EDITION
GP	GENERAL PRACTITIONER
PHC	PRIMARY HEALTH CARE
WHO	WORLD HEALTH ORGANIZATION

CHAPTER 1
INTRODUCTION

The purpose of this study was to evaluate referral systems in the Thaba Nchu Health Sub-district, Free State Province in terms of the factors that influences its function. This introductory chapter covers the background to the study, statement of the problem, its aims and objectives and an outline of the subsequent chapters.

1.1 BACKGROUND

South African health system embraces the District Health System model. District health system includes, health stations or posts, other health care facilities such as private health practitioners, community based organisations, primary health care clinics and district hospitals. Referral system links these institutions within the public health system. District hospitals have more personnel with more advance training than peripheral clinics. Ideally District hospitals provide the first level of outpatient or inpatient care for patients who have been referred by their primary care providers. District hospitals usually provide 24 hour care and are integrated into district health system to provide and to support range of services. Health problems that cannot be managed within the district health facilities are then referred to secondary level which in turn refers to tertiary facilities. [7]. In 1992, the World Health Organization (WHO) has defined and described the District Hospital[3] (Table 1.1).

Table 1.1 Ten features of a well functioning District Hospital [3]

An essential component of the health district;
Provides certain Level 1 hospital services that cannot usually be delivered at a clinic or health centre
Has the following clinical departments: emergency, care, medicine, surgery, obstetrics, paediatrics, psychiatry and outpatient services;
Provides a 24 hour service and has more than 30 beds;
Provides in-service training and support to PHC services and facilities in the district;
Ensures the maintenance of good clinical standards in the district;
Provides comprehensive (preventative, promotive, curative and rehabilitative) care, and is an integral part of all district health programmes;
Staffed by generalist doctors who receive support from secondary and tertiary level hospitals;
Should render primary level services to the local surrounding population, such as immunisation, growth monitoring and STD treatment (preferably through a separate PHC centre or OPD within the grounds of the hospital); and
Has the capacity to interact with the community and with other sectors.

1.2 THABA NCHU HEALTH SUB-DISTRICT

The Thaba Nchu Health Sub-district serves a population of 79 000. It has one district hospital, Dr.J.S Moroka Hospital (DJSMH), 11 clinics (two of which are 24hrs operational) and five GPs rooms situated centrally in Thaba Nchu town. Five of the eleven clinics are either centrally situated in that town or within six km radius from this DJSMH. There is a visiting medical officer to the central clinics on daily basis. The rest are in the most rural area of the Sub district the furthest being 50 km away from the DJSMH. The DJSMH also serves four clinics of the neighbouring sub-district Mantsopa, because of their proximity to DJSMH as indicated in the Figure 1.1

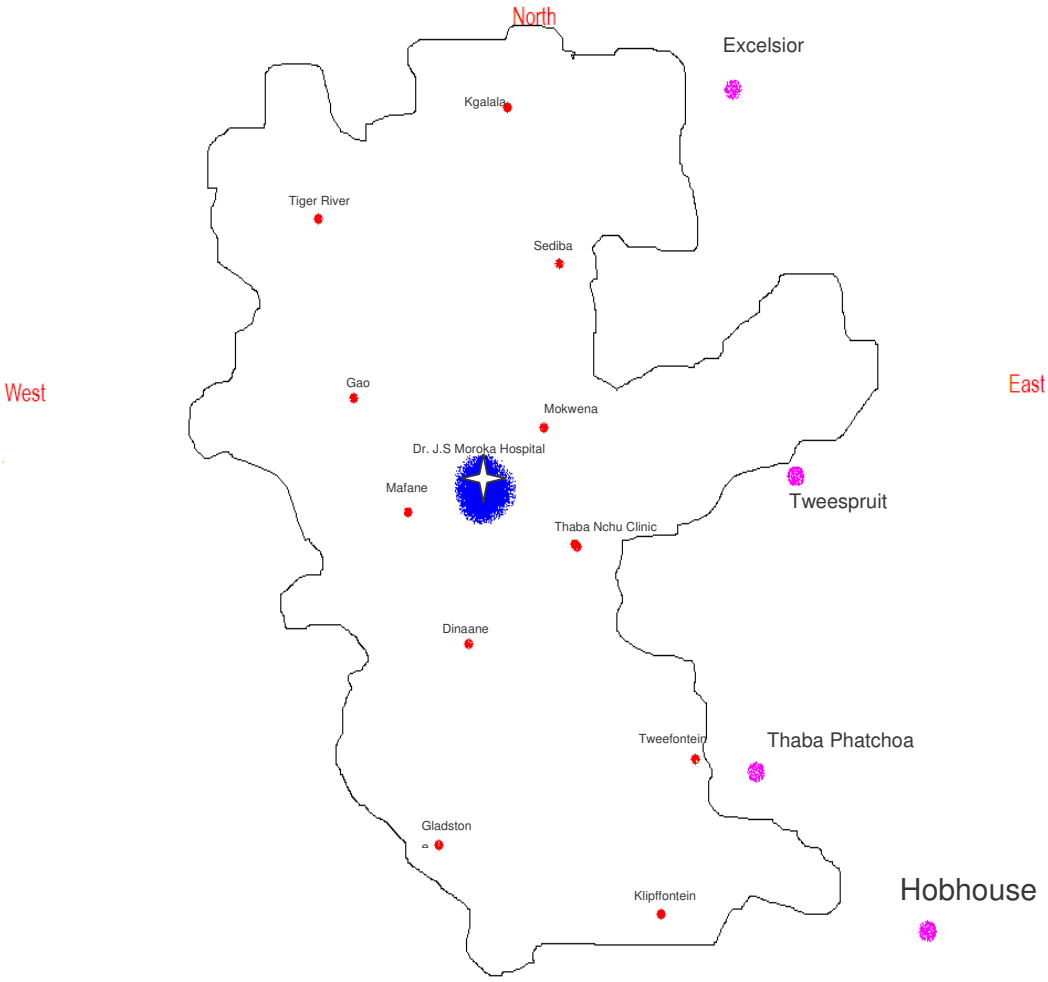

Figure 1.1 Thaba Nchu Health Sub-District

The DJSMH is a 180 bedded hospital rendering district hospital package. It has an Out patient department operating 8 hrs a day and 5 days a week providing general medical care and managed by general medical practitioners. It also has a Casualty unit which provide services for 24 hrs 7 days a week. The caseload of patients during the previous three years is listed in the Table 1.2.

Table 1.2 Total patients seen during last three years in the DJSMH

Years	Total	Out-patient Department	Casualty Department
2006	36 016	24 495	11 521
2007	32 575	19 507	13 068
2008	62 371	14 120	48 251
TOTAL	130 962	58 122	72 840

In this DJSMH, the services rendered and operational times are displayed at the main gate of the DJSMH. Referral system is well explained and displayed in both DJSMH and the clinics in the Thaba Nchu Health Sub-district and this is one of the aspects included in quality assurance tools for assessing the acceptability of a health facility within the sub-district. However, it is not known whether patients actually read these information and health professionals provide adequate education and information to patients and the family members on these aspects.

Hospitals are primarily for patients who require in-patient care. District hospitals provide out patients, casualty care services and theatre services managed by general health practitioners in a more equipped environment than the clinics. [7].

The above set up is similar in the Thaba Nchu Health Sub district where the DJSMH is a district hospital and therefore, a referral point for 11 clinics within the Thaba Nchu sub district and four clinics from the neighbouring sub district, Mantsopa , because of their proximity to the DJSMH. In addition, there are five general practitioners rooms within Thaba Nchu Sub district.

1.3 STATEMENT OF THE PROBLEM

The National Health System provides for three levels of care: primary, secondary and tertiary levels. The primary health care clinics are supposed to be the point of first contact of patients.

Studies have shown that the tertiary hospitals are overcrowded with patients that could have been treated in lower levels of care. No studies have been conducted at the level of district hospital to measure the caseload of patients who by-pass the clinics and go to district Hospitals. In addition there is a need to establish the type of patients that are treated in district hospitals, their common health problems and the final clinical outcome of such patients, [8] which is not currently available in the DJSMH. The DJSMH is struggling with influx of patients in its Outpatient and Casualty departments impacting its function.

Although there is always a perception that inappropriate referral system increases the caseload in district hospitals like the DJSMH resulting in increase in workload of the health professionals, no formal study has been done to systematically analyse the situation. The study is expected to assist in evaluation of the referral system in the Sub-district in terms of the factors influencing its function. The results of the study would assist management in primary health care clinics and district hospitals to take the necessary steps in strengthening the referral system within the Sub-district.

1.4 AIMS AND OBJECTIVES OF THE STUDY

1.4.1 MAIN AIM

To evaluate referral system in DJSMH in the Thaba Nchu Health Sub-district, Free State Province in terms of the factors that influences its function

1.4.2 SPECIFIC OBJECTIVES

a) To describe caseload of patients seen in the outpatient and casualty departments (designated units) in the DJSMH.

b) To describe the profile of patients attending these designated units.

- demographic characteristics
- clinical diagnosis and final outcome
- referral units

c) To evaluate efficiency of the designated units:

- Patients reporting time (arrival time) at the hospital
- Time spent by patients in the hospital
- Their residence

d) To determine knowledge and perception of participants about the referral system within the sub-district.

1.5 SUBSEQUENT CHAPTERS OF THE REPORT

The background to the research has been discussed and the objectives defined. The subsequent chapters will cover following areas:

Chapter Two: Literature review

The purpose of the literature review is to discuss concepts and similar researches done around the topic being studied as well as searching for potential solutions for the research problem.

Chapter Three: Research Methodology

This chapter describes the methodology used to conduct this research. The study setting, study population as well as methods and tools used for collecting and analysing the data are explained in this chapter.

Chapter Four: Presentation of results

In this chapter the findings of the collected data based on the objectives are analysed. These have been presented in tables and percentages.

Chapter Five: Discussion

In this chapter the findings of the reviewed literature are integrated with the results obtained from the analysis so as to address the aim and objectives.

Chapter Six: Conclusions and recommendations

This is the final section of the report and conclusion are drawn based on the research related aim and objectives. Recommendations to address some of the problems

identified in the results are made. Areas needing further research in evaluation of referral system have been cited in this chapter.

CHAPTER 2
LITERATURE REVIEW

In this chapter, relevant reports into referral system, factors influencing the referral systems, and impact of mal-functional referral system on resource utilization in health facilities are discussed.

2.1 INTRODUCTION

In South Africa, public heath sector follows a hierarchical referral system (Figure 2.1). District hospitals support the Primary Health Care in the district and provide level one (generalist) services to in-patients and outpatients referred from the primary health care clinics. These hospitals play an important role in ensuring that patients are treated at the appropriate level of care as well as ensuring continuity of care. [9-11]

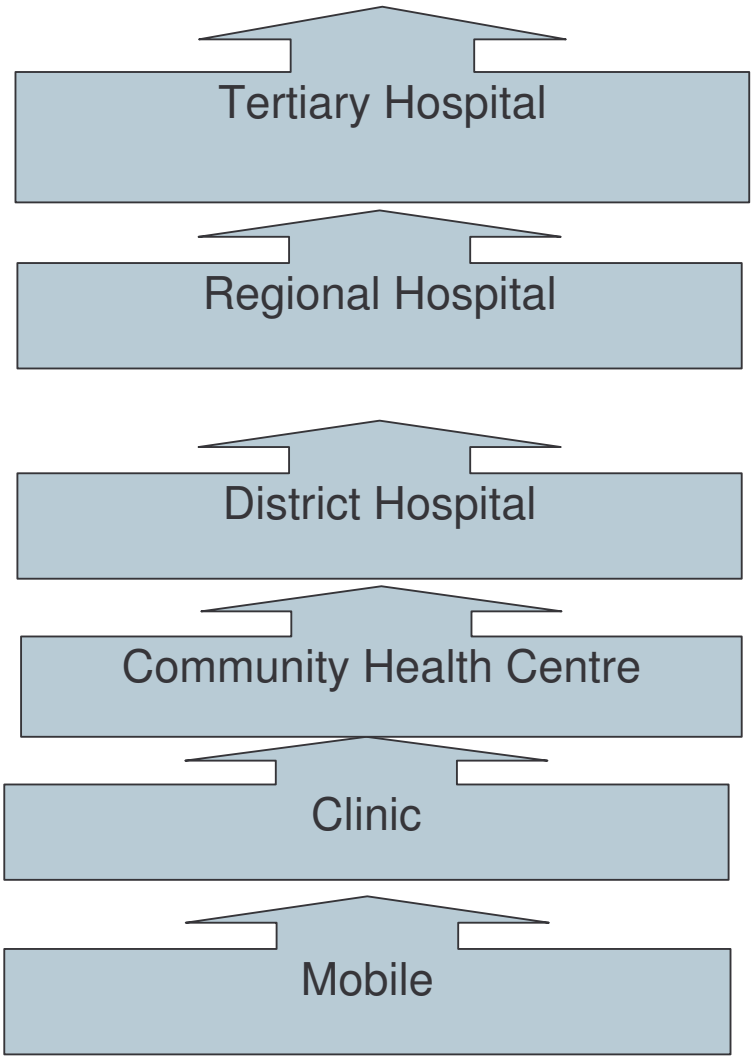

Figure 2.1 Referral system in South Africa

They are a link between the community, clinic and community health centres on one hand and regional and tertiary hospitals on the other hand. The successful management of a district hospital depends on the human factor (such as commitment, communication and relationship among staff), the organizational framework (such as its ethos, system), team work (such as unity, commitment, relationship and community outreach programme), its relationship with community (such as community integration) and lastly external influence (such as leadership, resource allocation).[9]

2.2 DISTRICT HOSPITAL

District hospitals play a central role between the primary health care clinics and regional as well as tertiary hospitals. They play a critical role in providing individual and families with timely medical care including surgeries within their capacity. Surgeries and medical intervention at this level is most cost-effective particularly in poorest countries. District hospitals usually serve as co-ordinating centres for local health information, planning, and training of health care workers and provide necessary date to national health planners[10]

As stated before district hospitals usually provide 24hours and are integrated into a district health system to provide and support a range of services such as[3]:

- District health information
- Implementation of peripheral primary health care policies
- Administrative and logistics support to primary health care efforts
- Communication with the community
- Curative and chronic care for patients referred from peripheral units
- District laboratory services
- Training and continuing medical education of health and other development agendas
- Development of local solutions to local health problems.

Patients' demands for hospital services may be influenced by a wide variety of factors. Patients' perception of severity of their illness, cultural beliefs, physical accessibility, affordability and performance of peripheral health units services influence the success of referral system within districts. Other issues affecting the hospitals are the quantity and quality of resources available in both clinics and hospitals. Often district hospitals are challenged with staff shortage and resources such as equipment and drugs to cater for the numbers that pitch up in hospitals. Interventions aimed at improving both primary health care clinics and district hospitals warrant investigation[12].

Assessing the standard of care hospitals provide is difficult. The National Hospital Strategic Plan (1996) identified 19 priority indicators that could be used to assess and manage the hospitals. These include among others[7]:

- Number of inpatient admissions
- Length of stay of patients
- Bed occupancy rate
- Theatre use
- Post hospitalization infection rate
- Outpatient attendance
- Emergency attendance
- Staff turn over and absenteeism.

In the situational analysis done at the Gordonia District Hospital in the Northern Cape Province, the Hospital reveals many symptoms of under performance attributed to the following among others (Table 2.1)[10]

Table 2.1 Factors influencing underperformance in Gordonia Hospital[10]

Management and management systems
• High absenteeism rate
• Administrative record keeping is poor
• There is poor internal and external communication
• Routine data is not used for decision making.
Patient Care
• Poor patient record keeping
• Patients are dissatisfied with the service
• Patients that arrive at the hospital are often not properly evaluated
• Cold cases go to casualties.
• Patients complain about lack of primary health care package coverage
• Lack of patient education in the hospital.
Client satisfaction
• Cost and distance to reach hospitals is very high
• General lack of satisfaction with care received.

2.3 OUTPATIENT DEPARTMENT AND CASUALTIES IN DISTRICT HOSPITALS

Patients that are to be seen by hospital medical officers register in outpatient or casualty departments as referred from primary health care clinics. Depending on the urgency of their ailments there are those that come straight to casualty department for urgent medical interventions. Once the patients arrive in the hospital they are registered, given a personal registration number and the card bearing the registration number for subsequent visits. The new file would be given to patients visiting these areas for the first time or the old file would be retrieved for patients that have visited hospital before. The patients that are referred from the lower levels of care present the referral letter stating the health problems and the interventions done at that level and the reasons for referral to the hospital.

These units often are overburdened by patients who could have been managed at the primary health care clinics. Most of the self referred patients reporting at out patient department come during the normal working hours of the primary health care clinics, bypassing the clinics. Some studies such as the one done in Nigeria suggested that most of the patients that visited the out patient department of the Teaching hospital are from rural areas where there might not be enough primary health care clinics and patients go straight to hospital to seek better care at fully fledged urban hospitals[8]. The district hospital package include among other services out-patients and casualty services. The out-patient is to render services such as dental services, basic ophthalmic services, and basic curative services including diagnosis, treatment and referral. It is also to cater for referred medical and surgery patients from lower levels of care; referred psychiatric, social work services as well as rehabilitation services. Casualty services cater 24 hours services for accident and emergency patients and minor operations can also be performed in this unit[7].

2.4 REFERRAL SYSTEM

The referral system in Thaba Nchu sub-district follows the similar pattern elsewhere in South Africa (Figure 2.1).

Studies done on overburdening of specialised clinics in the tertiary hospitals in South Africa indicated the high percentage of patients reporting in out patients departments being unjustified. A study conducted in King Edward VIII Hospital in Durban to determine the case load of children attending Paediatric Out Patient Department, found that the case load in the hospital could be reduced by half if only referred patients were seen in this facility. A large proportion of patients attending hospital out patient departments for the first time are unjustified. Proper referral system implementation would reduce workload and caseload experienced by hospitals, thus improving quality of care in our health care facilities.[13]

2.4.1 FACTORS INFLUENCING REFERRAL SYSTEM

Studies have found following factors that might influence a referral system and its use: Accessibility, Acceptability, efficiency and effectiveness. [6;8;14]

4.1.1.1 Accessibility

Various researchers have found that accessibility of primary health care services affect compliance to referral system especially in rural areas where clinics may not be available or being far and difficult to reach than in urban areas. A study on referral system in Nigeria found that when primary health care clinics were not accessible after the usual working hours, patients go straight to the nearest hospital * Although the study was done on tertiary hospital, findings are still applicable to a district hospital.

A similar study done in Mauritius yielded the same results. Hospitals were situated geographically nearer to most people in urban areas than clinics and therefore, people make hospitals their first entry level [6].

Compounding impact of distance between the primary health care clinics and referral hospital some researchers found that problems relating to the availability, regularity, and cost of transportation to referral centres also affect accessibility to the health facilities and therefore, referral system and service utilization. [6]

There is no similar study done in South Africa to measure the impact of geographical accessibility on referral system. This study hopefully would fill that gap.

4.1.1.2 Acceptability

Various reasons have been cited about the acceptability of referral systems among patients. Patients bypass the primary health care clinics because such clinics are not available [6;8;14] or are inadequate, there is no medication and that the care given in primary health care clinics is inferior .Other reasons include real emergencies that require casualty attendance at hospital level.

A study done on referrals in Africa (Meru District Hospital in Kenya) found out that attitudes of personnel had influence on patients' acceptability to a particular health facility.[15]

The hospital authorities in various places have attempted to address this problem by introducing various measures such as by pass fee, gateway clinics. [6]. [16]

Time of operations of health facilities also play an important role in acceptability of referral system. In a study done in Nigeria on referral system in tertiary hospital it is found that the patients that have been referred report usually between 2 pm and 10 pm and the self referrals between 10pm and 6am probably the time the working people can bring their sick family members to a health facility and avoid waiting for a long time to be attended. [8]

No study has been done in South Africa to seek patients' opinion about the most acceptable operating times of out-patient departments.

4.1.1.3 Efficiency

The overburdened hospitals with inappropriate referrals affect their efficiency. Various researchers indicate that most of self referrals to hospitals outpatient departments could have been treated at lower levels of care (PHC clinics). This increased workload affects the quality of care given in hospital out patients departments. A reduction of numbers seen at outpatients units have shown to improve their efficiency. [6;13]

4.1.1.4 Patient profile

Patients without medical aid use government hospitals more than the insured patients. Most of the insured patients usually seek preliminary medical consultation from private general medical practitioners [14]

The most common symptoms patients presented with, in outpatient departments were general medical ailments such as respiratory disorders and common conditions such as infections, obstetric conditions, joint disorders, and cancer, hypertension and skin problems. [14]

2.4.2 IMPACT OF MALFUNCTIONING OF REFERRAL SYSTEM

4.1.1.5 Caseload

The hospitals are usually overwhelmed with patients which impacts on efficiency and effectiveness in public hospitals in Nigeria and Ethiopia. [8;8] It is important that a similar study be done in South Africa to determine impact of increased case loads in public hospitals on their efficiency particularly in the rural areas.

4.1.1.6 Workload of health professionals

The hospitals are overcrowded with patients that could have been seen in the primary health care clinics. Inappropriate referrals increase workload of fewer health professionals working in public hospitals. Many patients spend long waiting hours to be seen by highly trained health workers who could be seeing appropriate patients resulting in misuse of hospital resources and distortion of their functions [8]. This results in increasing workload of staff and overspending.

The DJSMH is experiencing the same situation seeing an average of 4041 out patients and 1243 emergency cases a month. However no systematic study has been done in the DJSMH to determine if patients reporting in this DJSMH are justifiable.

4.1.1.7 Quality assurance

The quality assurance tool is used at this DJSMH to monitor the current situation (such as caseload and workload of staff) and to determine reasons for referral and self-referrals. In addition, the DJSMH also collects information about the perception of staff on appropriateness of patients treated in hospital as well as the patients own perceptions about function of health system. However, this information is never systematically analysed to assist the primary health care and hospital management on identifying the gaps in the clinics and the hospital to improve their services especially the referral system.

CHAPTER 3
METHODOLOGY AND PROCEDURES

The methodology for this study was selected on the basis of its aims and objectives. In this chapter, the following are discussed: setting, scope, and study design and research tools.

3.1 SETTING OF THE STUDY

Setting of the study is the DJSMH in the Thaba Nchu Health Sub-district of the Free State Province in South Africa. This study is done in the following units at this Hospital:

- Out-patient Department
- Casualty

3.2 SCOPE OF THE STUDY

This study is a descriptive study and no interventions were undertaken during the assigned study period.

3.3 STUDY DESIGN

A cross-sectional study design is used for the study. The study is based on retrospective review of hospital records.

3.4 STUDY PERIOD

All the registers and records of patients who attended the DJSMH outpatient and emergency departments during the week of the 30th March to the 5th April 2009 were considered. The week of 30th March to the 5th April 2009 was randomly selected among the weeks between January and April 2009 that has five normal working days

3.5 STUDY POPULATION

The records of participants that were included in the study includes

- The patients that utilized the designated units at the DJSMH facilities

- The Health Professionals and Operation Managers employed at the designated units at the DJSMH

Inclusion Criteria

- Records of patients who attended the designated Units during the study period.
- All health professional-participants who are employed and allocated in the designated units.

Exclusion criteria

- Incomplete or missing records
- Patients who were seen at outpatient based on an appointment system by the medical and allied disciplines such as physiotherapy, occupational, speech therapy.

3.6 STUDY SAMPLE

Objective 1: All the records of patients who attended the DJSMH outpatient and emergency departments during the study period study.
Objectives 2 and 3: All the registers and records of patients who attended the DJSMH outpatient and emergency departments during one week study period (30th March to 5th April 2009) were considered for this study.

3.7 DATA MANAGEMENT

3.7.1 VARIABLES

Following variables were measured during the study:

(a) Caseload

- Number of referred patients.
- Number of self referred.
- Number of emergencies.

(b) Demographic characteristics of subjects

- Age,
- Ethnicity
- Gender

(c) Clinical condition

- Acuteness (acute or chronic)
- Final diagnosis (based on ICD-10 code)
- Final Outcome (Discharged or referred to higher level, or Treated and discharged)

(d) Referral Unit

- Clinics,
- Private Sectors,
- Other Government hospitals,
- self referral

(e) Efficiency (measured by time spent in the system)

The efficiency was measured by time spent in the system which includes:

<u>The Outpatient Department</u>

- Time spent between record office and admission clerk
- Time spent between admission clerk and nursing station
- Time spent between nursing station and doctor
- Time spent between doctor and pharmacy
- Time spent between doctor and pharmacy
- Time spent between Clerk and Pharmacy
- Time spent between record office and Doctor

<u>The Casualty Department</u>

In the Casualty Department, the patient arrives at the Record office and goes to the Doctor. Therefore, the efficiency is measured by:

- Time spent between record office and Doctor

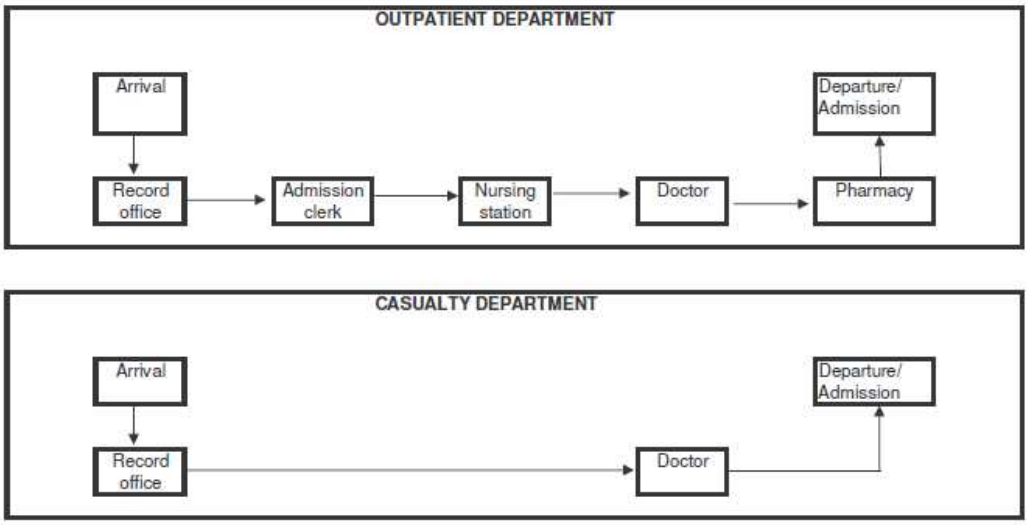

Figure 3.1 Flow-diagram for Out-patient and Casualty Departments

(f) Knowledge and Perception of participants regarding referral

- - Distance from the nearest clinic.
- - Distance from the designated hospital.
- - Transport availability to clinic.
- - Reason(s) why the clinic not used.

(g) By pass fee implementation

(h) Health Professionals

- Levels of health professionals
- Working hours

3.7.2 DATA COLLECTION

No specific data was collected for this study. The quality assurance tools were used to collect the data from the records and registers for each day. These were submitted to the researcher on daily basis at the end of each shift.

3.7.3 DATA COLLECTION TOOLS

The existing quality assurance tools were used to collect data from the register and patients' records. The data was extracted to Microsoft Excel spread-sheets.

3.7.4 DATA ANALYSIS

All data was exported and then analyzed with into the EPI-Info software (version 3.4.1). Descriptive statistics has been used for analysis (Table 3.2).

Table 3.2. Statistical tests

	Parametric data	Non-parametric data
Central tendency and spread	Mean and Median Standard deviation and inter-quartile range	Proportion

3.8 ETHICAL CONSIDERATIONS

This project was approved by the Human Research Ethics Committee of the University of the Witwatersrand (R14/49) (Annexure A). It was also authorized by the Head of the Department of the Free State Provincial Department of Health.

CHAPTER 4
RESULTS

The results obtained from the analysis of the data are described in this chapter.

4.2 CASELOAD

The caseload in the DJSMH during the one week study period is described in the Table 4.2.

Table 4.1 Caseload during one week study period

Date	Total	OPD	Casualty
30 March 2009	108 (21%)	68 (28%)	40 (14%)
31 March 2009	86 (16%)	55 (23%)	31 (11%)
01 April 2009	76 (14%)	46 (19%)	30 (10%)
02 April 2009	86 (16%)	44 (18%)	42 (15%)
03 April 2009	60 (11%)	28(12%)	32 (11%)
04 April 2009	55 (10%)	-	55 (19%)
05 April 2009	57 (11%)	-	57 (20%)
TOTAL	528	241(46%)	287(54%)

A total number of 528 patients were registered during the study period, 241 (46%) were registered in Out-patient department and 287 (54%) were registered in Casualty department. However not all patient's records reflected the variables that were measured and 9 other records could not be traced.

A total number of 449 records could be used. The highest number 108 (21%) of patients seen was on Monday the 30th March 2009, followed by Tuesday 31st March 2009 and Thursday 02nd April 2009. However most patients in Casualty were seen during the weekend where the highest number 57 (20%) of the total registered in this department were seen on Sunday the 05th April 2009, followed by 55 (19%) on Friday 04th April 2009 when the Out patient Department was closed.

4.3 PROFILE OF PATIENTS

4.3.1 AGE

Age of the subjects is listed in the Table 4.2.

Table 4.3 Age of patients that were seen in both designated units (n=449)

	Total	**OPD**	**Casualty**
Mean (SD)	34,2 (20,4)	36,9 (20,01)	31,9 (20,2)

The age of patients ranges from 1 month minimum to 87 years maximum. The DJSMH caters for all age groups in both designated units.

4.3.2 GENDER

The study population comprised of both male and female of all ages in both departments (Table 4.3).

Table 4.3 Gender of participants (n=449)

Gender	**Total**	**OPD**	**Casualty**
Male	213 (47%)	83 (42%)	130 (52.2%)
Female	236 (53%)	117 (58%)	119 (47%)
TOTAL	449	200	249

The majority of the patients were females in both designated units. More males were seen in casualty department as compared to more females that were seen at outpatient department during the study period.

4.3.3 ETHNICITY

The ethnicity of patients that visited the two units is listed in the Table 4.4

Table 4.4 Ethnicity

Ethnicity	TOTAL	OPD	Casualty
African	431 (96%)	193 (97%)	238 (69%)
Coloured	15 (3%)	7 (3%)	8 (3%)
Indian	2 (0.6%)	0	2 (0,8%)
White	1 (0.4)	0	1 (0,2%)
TOTAL	449	200	249

The majority of patients seen in both designated units are Africans.

4.3.4 EMPLOYMENT STATUS

The employment status of patients that visited the two units is listed in the Table 4.5

Table 4.5 Employment status

Employment	**Total**	**OPD**	**Casualty**
Employed	114 (26%)	55 (28%)	59 (24%)
Unemployed	329 (74%)	145 (72%)	184 (76%)
	443	**200**	**243**

The majority of the subjects were unemployed in both the units.

4.4 *CLINICAL OUTCOME*

4.4.1 FINAL DIAGNOSIS

The final Clinical diagnosis of patients seen in both the designated units as ICD 10 classified are shown in the Table 4.6.

Table 4.6 Clinical outcomes

	Diseases	Total	Out-patient	Casualty
1	Cardio-vascular disorders I00-I99	61	35(17%)	26(10%)
2	Infections and Parasitic disorders A00-B99	41	24(12%)	17(6%)
3	Injury, poisoning and certain other or consequences of external causes. S00 – T98	99	23(11%)	76(28%)
4	Respiratory disorders J00 – J99	64	18(9%)	46(17%)
5	Skin and Subcutaneous tissue disorders L00 – L99	19	16(8%)	3(1%)
6	Factors influencing health status and contact with health services. Z00 – Z99	20	14(7%)	6(2%)
7	Nervous System G00 – G99	21	13(6%)	8(3%)
8	Genito Urinary disorders G00 – G99	20	13(6%)	7(3%)
9	Gastro-Intestinal disorders K00 – K93	41	10(5%)	31(11%)
10	Musculoskeletal System and connective tissue disorders M00 – M99	11	8(4%)	3(1%)
11	Endocrine, Nutritional and Metabolic disorders E00 – E90	11	7(3%)	4(1%)
12	Symptoms, Signs and abdominal clinical and laboratory findings not elsewhere classified. R00 – R99	10	7(3%)	3(1%)
13	Mental and behavioural disorders F00 – F99	18	6(3%)	12(4%)
14	Pregnancy and Childbirth and puerperial disorders O00 – O99	9	4(2%)	5(2%)
15	Ear and mastoid process. H60 – H95	4	2(1%)	2(1%)
16	Haematological disorders. D50 – D89	2	2(1%)	
17	Perinatal disorders P00 – P96	3	3(1%)	

Of the total number of 449 patients seen in both designated units, 27 (6%) had more than one diagnosis.

In the Out-patient department, the most patients seen had Circulatory System related diseases 35 (17%) followed by infectious and parasitic diseases 24 (12%).

The other common diseases in this department were injury and poisoning 23 (11%), respiratory diseases 18 (9%) and skin and subcutaneous tissue diseases 16 (8%) as shown on Table 4.7.

The least clinical diagnoses seen were ear and mastoid processes related diseases 2 (1%), blood and blood forming disorders involving immune mechanism diseases 2 (1%) as well as certain conditions originating in the perinatal period 3 (1%).

In the Casualty department most patients were diagnosed injury and poisoning 76 (28%), respiratory diseases 46 (17%), circulatory system diseases 26 (10%) and diseases of the digestive system 31 (11%) as indicated in the table.

The other various diagnoses ranging between 6% and 1% were also seen as indicated in table and these were the patients that could have been seen in Out-patients department or treated first at Primary Health Care Clinics.

The five most common health problems seen in both designated units are:

- Injury, poisoning and certain other or consequences of external causes;
- Respiratory system diseases;
- Circulatory system diseases;
- Digestive system and
- Infectious and parasitic diseases.

4.4.2 ACUTENESS

The number of acute and chronic cases that reported in the two designated units is listed in the Table 4.7.

Table 4.7 Acuteness

Acuteness	Total	OPD	Casualty
Acute	235 (53%)	58(30%)	177(72%)
Chronic	208(47%)	138(70%)	70(28%)
TOTAL	443	196	247

The more acute cases were attended in the casualty department in comparison to the outpatient department where most of the patients were chronic.

4.4.3 ASSOCIATION BETWEEN ACUTENESS AND DAYS AND TIME OF ARRIVAL

4.4.3.1 Acuteness and Days of the week

The association between acuteness and patients' arrival according to days of the week (weekdays and week-end) is listed in Table 4.8.

Table 4.8 Acuteness and Days of the week

	Total	Week-day	Week-end
Acute	245 (63.8%)	165 (57.9%)	80 (80.8%)
Chronic	139 (36.2%)	120 (42.1%)	19 (19.2%)
Total	384	337	103

Most of the patients who arrived during week-ends had acute problems.

4.4.3.2 Acuteness and time of arrival

The association between acuteness and patients' arrival according to time of arrival (Working-hour-07:00 to 16:00 and After-hour-16:00 to 07:00) is listed in Table 4.9.

Table 4.9 Acuteness and time of arrival

	Total	Working-hour (07:00 to 16:00)	After-hour (16:00 to 07:00)
Acute	245 (63.8%)	165 (57.9%)	80 (80.%)
Chronic	139 (36.2%)	120 (42.1%)	19 (19.2%)
Total	384	285	99

Most of the patients who arrived during after-hours had acute problems.

4.4.3.3 Acuteness and working hours

The association between acuteness and patients' arrival according to working hours (Working-hour-07:00 to 16:00 during week-days and After-hour-16:00 to 07:00 during week-days and week-ends)) is listed in Table 4.10.

Table 4.10 Acuteness and working hours

	Total	Working-hour	After-hour
Acute	241 (63.4%)	101 (54.6%)	140 (71.8%)
Chronic	139 (36.6%)	84 (45.4%)	55 (28.2%)
Total	380	185	195

The scenario remained same when the week-ends are taken into consideration.

4.4.4 OUTCOME

The outcome of the patients seen in both designated units is listed in the Table 4.11.

Table 4.11 Outcomes

Outcome	Total	OPD	Casualty
Discharged	323(72%)	146(83%)	177(65%)
Referred	22(5%)	7(4%)	16(6%)
Admitted	87(19.3%)	18(10%)	68(25%)
Death	3 (0.7%)		3(1%)
Absconded	14(3%)	4(3%)	10(4%)
TOTAL	**449**	**175**	**274**

Most of the subjects seen in both designated areas were treated and discharged on the same days. More patients were admitted from the casualty than the outpatient department.

4.5 EFFICIENCY

The time spent in the Hospital during the study period is described in the Table 4.12. The time spent during the system is not normally distributed therefore described by median and interquartile range.

Out-patient Department

The subjects spent significant amount of time in the system before they were seen by the nurses and doctors:

- Between Record office and clerk (Median: 45 min)
- Between clerk and Nursing station (Median: 102 min)

They have spent relatively less time between the doctor and pharmacy (Median 35 min).

Casualty Department

The subjects spent significant amount of time in the system before they have seen by the doctors (Median: 329 min) which is significantly more than the Out-patient department (Median 133 min). This is of concern.

Table 4.12 Time spent in the Hospital

Time between		Total	OPD	Casualty
Record and clerk (min)	Mean ± SD		62 ± 83	
	Median and IQR		45 (29-73)	
	Minimum		5	
	Maximum		840	
Clerk and nurse (min)	Mean ± SD		117 ± 99	
	Median and IQR		102 (50-162)	
	Minimum		5	
	Maximum		775	
Nurse and Doctor (min)	Mean ± SD		187 ± 149	
	Median and IQR		165 (105-240)	
	Minimum		9	
	Maximum		1265	
Doctor and Pharmacy (min)	Mean ± SD		236 ± 381	
	Median and IQR		35 (25- 82.5)	
	Minimum		5	
	Maximum		1635	
Clerk and Pharmacy (min)	Mean ± SD		473 ± 373	
	Median and IQR		345 (275- 450)	
	Minimum		2	
	Maximum		1440	
Record and Doctor (min)	Mean ± SD	265 ± 196	191 ± 188	351 ± 169
	Median and IQR	250 (115 – 374)	133 (60- 254)	329 (256- 405)
	Minimum	0	0	25
	Maximum	1432	990	1432

IQR= Interquartile range

4.6 REFERRALS

4.6.1 JUSTIFICATION FOR ATTENDANCE AT THE HOSPITAL

The doctors record in the patients' file if their attendance at the Hospital is justified. In other words, the patients who were classified as Justified should be seen at the Hospital and those who were classified as Non-justified should be seen at clinic. The distribution of patients according to this categorisation is described in the Table 4.13.

Table 4.13 Justification status

Justified	Total	OPD	Casualty
Justified	212 (49%)	64(32%)	148 (62%)
Not justified	225 (51%)	136 (68%)	89 (38%)
TOTAL	**437**	**200**	**237**

The categorisation of these patients suggested that only 49% of patients in both designated units would require hospital care. The rest of them could be seen at the PHC facilities.

4.6.2 REFERRAL UNIT

The distribution of patients according to their referral is described in the Table 4.14.

Table 4.14 Referral and self referral

Referral	TOTAL	OPD	Casualty
Self	240 (53%)	104 (52%)	136 (55%)
Referred	131 (29%)	96 (48%)	35 (14%)
Ambulance	78 (18%)	-	78 (31%)
TOTAL	**449**	**200**	**249**

The distribution of self referred patients in both the designated units is similar.

4.6.3 REASONS FOR SELF REFERRAL

The reasons for patients for self referral to the Out patient unit are listed in the Table 4.15.

Table 4.15 Reasons for referral

Wants to see Medical Officer	45 (47%)
Poor Services in Clinics	30 (32%)
Nearer to Hospital	8 (8%)
No Treatment (drugs)	7 (7%)
Did not know about referral system	1 (2%)
Bad Staff attitude	4 (4%)
TOTAL	**95**

Desire to be seen by the doctors and poor services at the clinics are the two commonly cited reasons for self referrals.

4.6.4 DISTANCE TRAVELLED BY PATIENTS

Reported distances from their home to their nearest public health are listed in the Table 4.16.

Table 4.16: Distance travelled from health facilities

	Nearest Clinic	Hospital
Average Distance	11 km	24km

The average reported distance travelled by most of the patients during the study period to their nearest clinic is 11 km and to the DJSMH is 24 km. Minimum and maximum reported distances travelled to the clinics are 3 km and 4 km respectively. Minimum and maximum reported distances travelled to the DJSMH are 14 km and 56 km respectively.

4.6.5 REFERRING FACILITIES

The distribution of patients from referral facilities that referred patients to both units are listed in the Table 4.17.

Table 4.17: Referred facilities

Referral	TOTAL	OPD	Casualty
Clinics	123 (94%)	93 (97%)	30 (86%)
Private Practitioners	4 (3%)	2 (2%)	2 (6%)
Other Hospital	4 (3%)	1 (1%)	3 (8%)
TOTAL	**131**	**96**	**35**

The majority of referrals to both units are from the PHC clinics.

4.6.6 EDUCATION ON REFERRAL SYSTEM

The distribution of patients according to their education on referral system reflected on their clinical record is listed in the Table 4.18

Table 4.18: Education on referral.

Education on referral	Outpatient department
Recorded as given	2(2%)
Recorded as not given	102(98%)
TOTAL	**104**

Of the total 104 of the self-referral in Outpatient department patient's records, only 2 (2%) records reflected that patients were educated on referral system and the rest were blank.

4.6.7 BYPASS FEE FOR REFERRAL

The distribution of patients according to bypass fees is listed in the Table 4. 19

Table 4.19: Bypass fee charges

Charged Bypass fee	Outpatient
Charged	0
Not Charged	74(81%)
Exempted	17(19%)
TOTAL	**91**

The records show that no patient had been charged by pass fees where else there is a provincial policy for implementation of by pass fee.

4.6.8 REFERRALS AND ACUTENESS

The association between referral and acuteness of their clinical problems is described in the Table 4.20.

Table 4.20 Referral and acuteness

	Total	Acute	Chronic
Self referral	196 (52.3%)	144 (59.8%)	52 (38.8%)
Ambulance	75 (20%)	58 (24.1%)	17 (12.7%)
Referral	104 (27.7%)	39 (16.2%)	65 (48.5%)
Total	375	241	134

The above table showed that the majority of acute patients were self-referred, whereas almost half of the chronic patients were referred.

4.6.9 REFERRALS AND WORKING HOURS

4.6.9.1 Referral and Days of the week

The association between referral and their arrival according to the days of the week is described in the Table 4.21.

Table 4.21 Referral and Days of the week

	Total	Week-day	Week-end
Self referral	230 (52.3%)	168 (49.9%)	62 (60.2%)
Ambulance	78 (17.7%)	48 (14.2%)	30 (29.1%)
Referral	132 (30.0%)	121 (35.9%)	11 (10.7%)
Total	440	337	103

During the week-end, the majority of the patients were self-referral as the nine of the clinics do not operate during week-ends. However, during the week-days almost half of the patients were self-referral.

4.6.9.2 Referral and Time of arrival

The association between referral and their time of arrival is described in the Table 4.22.

Table 4.22: Referral and Time of arrival

	Total	Normal time (07:00 to 16:00)	After-normal time (16:00 to 07:00)
Self referral	227 (52.1%)	143 (51.1%)	84 (53.8%)
Ambulance	77 (17.7%)	19 (6.8%)	58 (37.2%)
Referral	132 (30.3%)	118 (42.1%)	14 (9.0%)
Total	436	280	156

After normal-time, very few patients were referred in comparison to week days where almost same number of patients were referred and arrived by them.

4.6.9.3 Referral and working hours

The association between referral and their arrival according to working hours is described in the Table 4.23.

Table 4.23 Referral and working hours

	Total	Working-hour (07:00 to 16:00 during week days)	After-hour (16:00 to 07:00 and week-ends)
Self referral	227 (52.1%)	109 (49.4%)	118 (55.3%)
Ambulance	77 (17.7%)	10 (4.2%)	67 (34.0%)
Referral	132 (30.3%)	111 (46.4%)	21 (10.7%)
Total	436	239	197

Most of the self referrals are on weekends and there is a minimal number referred by clinics after-hours.

4.7 HEALTH PROFESSIONALS

4.7.1 LEVELS AND TYPES OF HEALTH PROFESSIONALS

The levels and types of health professionals worked in the two units during the study period is listed in the Table 4.24.

Table 4.24. Levels and types of health professionals

Categories	Number
Doctors	3
Professional Nurse	6
Enrolled Nurses	1
Enrolled Nursing Assistant	3
TOTAL Staff	13

The personnel listed in the table 4.24 were allocated to work in both the units and they work for seven days a week.

4.7.2 WORKING HOURS FOR HEALTH PROFESSIONALS

The number of hours that each category of health professionals worked in the two designated units is listed in the Table 4.25.

Table 4.25. Hours contributed by Health professional

Categories	Planned Hours	Total contribution in hours
Doctors	80	80
Professional Nurse	200	142
Enrolled Nurses	6	6
Enrolled Nursing Assistant	130	125
TOTAL HOURS	416	433

The above table indicates the total number of hours each health professionals allocated in both units worked against the planned hours during the study period. The study indicates the shortage experienced with the nursing personnel during the study period

as indicated in Table 4.25. Some had to work overtime to carry the workload especially to cover the hours of officials that took unplanned leaves during the study period.

CHAPTER 5
DISCUSSION

In this chapter, the results obtained from the analysis of the data are discussed and compared with those from other published studies.

5.1 *INTRODUCTION*

This study was the first scientific evaluation of the data collected at the DJSMH to evaluate the implementation of the referral system within Thaba Nchu Sub-district and the DJSMH. No studies have been conducted at the level of the district hospital to measure the caseload of patient by-passing the clinics to the District Hospital, their profile including their common health problems they present with in the District hospital, the final outcome of such patients and the impact this has on efficiency of the hospital. In addition the study addressed the knowledge and perception of referral system within the sub district.

The findings documented in this report are based on the data derived from patients' records and the registers as documented by health workers working in these two departments. No interviews were conducted specifically for this study. The data was collected using routine data collection tools in this hospital. The records of all patients who visited the designated units during the randomly selected week were used to collect data. The total number of registered patients was 528; patients who came for collection of treatment for chronic diseases were excluded from the study. Only data from 449 records could be used.

5.2 *CASELOAD*

Referral system is advocated from the lowest level of primary health care to the highest level of care in Public Health Care facilities, except in emergency when patient can be taken to any facilities for immediate treatment.

The study shows that the highest number of patients 68 (28%) were seen on a Monday, and the lowest number 28 (12%) on a Friday in Out-patient department. This has been the trend for the past three months as reflected in the monthly statistics.

The highest number of patients in casualty department was on Saturday 55 (19%) and Sunday 57 (20%).The days when Outpatient department was closed and only two clinics are operational.

5.3 *PROFILE OF PATIENT*

AGE

In the study that was done in Nigeria on referral system of a tertiary health facility, the age of patients that were seen ranged from 0 to 89 years. About 88% of them aged less than 50 years and 41.4 % aged between 20 years. The female-male ratio was 1:1[8] .

The findings from this study suggest that female patients were more seen in Out-patient department than in Casualty department where more males were seen in Casualty.

ETHNICITY

The Hospital is in a rural area, serving predominantly Africans and very small number of other ethnic groups. The average age of patients that were seen was 34.2.

EDUCATIONAL STATUS

The study on referral system in Nigeria showed that educational status had no influence on whether they were referred or not. So, both the educated and uneducated bypass the lower level of care to obtain health care at the Teaching hospital.[8]. The similar measurement cannot be applied at the DJSMH because of poor recording of patient's demographics in the DJSMH.

EMPLOYMENT AND INSURED

The DJSMH is predominantly used by unemployed and medically uninsured patients. Few patients are receiving social grants for various reasons that were not part of the study. These were reflected in patients' records in both departments.

5.4 *ACUTENESS OF THEIR CLINICAL PRESENTATION*

A study conducted by Nordberg et al (1996) in Kenya, showed that most referrals are urgent, often triggered by a situation with little choice, such as need for urgent medical attention. The finding is similar in this study, where 235 (53%) were classified as acute in both departments, the highest being casualty where 177 (72%) were reported to be acute, however in Outpatient department 153 (70%) of patient seen were chronic. This also suggests that it is not their acuteness, nature of their diseases that made patients to bypass the Primacy Health Clinics as some of these patients come to hospital while clinics are still open .

The study conducted by Kimberly et al (2004) in Paediatric Outpatient suggest that the proportions of referred and non referred patients admitted indicated that a large number of self referred patients either did not seek medical care until their illness became severe or that they sought care at other levels of health care without improvement or proper referral. .

5.5 *CLINICAL OUTCOME*

The referral system is known and practised by health professionals in the DJSMH, and primary health care. Not all of the patients coming to district hospital are admitted. The study suggests that most patients 323 (72%) seen in both departments are discharged. Patients that are referred to higher levels of care are mostly referred from Casualty department.

5.6 *EFFICIENCY*

Both designated units experience long waiting times by patients. The longest waiting was recorded after the registration of patients by the clerical staff before seen by nurses and doctors.

Long waiting times are comparatively longer in the Casualty than in Outpatient department. This is attributed by the facts that acute patients are given preference in the casualty and that medical officers are not full time in casualty. They are only called for

emergencies by the nurses. During the week patients that cannot be seen by medical officers in the Out patient department by 16hrs when the Outpatient department closes are transferred and seen in the Casualty department. The long waiting period between the doctors and pharmacy reflect reasonable waiting period in pharmacy department. The long waiting times in the two designated units are a concern and need serious interventions to improve efficiency in these departments.

5.7 *REFERRALS*

The tendency of patients to bypass primary health care clinics makes patients to spend long waiting hours in hospitals. This also distorts the core functions of the hospitals and is linked to overcrowded out-patient and casualty departments. The provision of primary health care by hospital is uneconomical; treatment cost per illness is much more expensive than in a primary health care centre.[8]

REFERRALS AND SELF REFERRAL

The study shows that 240 (53%) patients seen in both out-patient and casualty departments had bypassed the referral system. 104 (52%) self referral were recorded in out-patient department and 136 (55%) in the casualty department. The 78 (31%) of patients seen in casualty department, were brought in by ambulance straight to the hospital. The practice that the patients brought by ambulance, are regarded as referred patients, would not reduce the conclusion that patients seen in both departments were self-referrals. There is also a need for a systematic research on criteria used by ambulance personnel to bring patients straight to hospital instead of the clinics.

JUSTIFICATION

In a study done at King Edward VIII Hospital – Durban, it was found that a large proportion (42%) of patients attending the outpatient department for the first time was unjustified, and that referred visits were more often justified. If only referred patients were seen the annual number of first visit would be reduced to about 7 500 of which about 1400 would be unjustified. There was a criteria set for justification in this study. [13]

This study suggests that 225 (51%) of patients seen in both departments were unjustified. Most unjustified patients were seen in the Outpatient and most justified patients in the Casualty department. (Table 4.13) No criteria was available to measure this variable, it depended on the medical officers after examining and treating the patient.

BYPASS FEE

The policy for bypass fee is available in the Free State Department of Health however is not fully implemented in the DJSMH. Recording thereof is poor and no patients were charged or paid bypass fee. The practise to charge by pass fee is aimed at enforcing patients to start consulting in their nearest primary health care clinics. This indicates that personnel in the DJSMH are doing very little to foster this practice

5.8 *ACCESSIBILITY*

By nature referral hospital are sited in towns and cities. People living in rural areas will tend to live some distance from the nearest referral hospital. Studies of the accessibility of hospital care in countries such as Ethiopia[17] and Nigeria[18] have confirmed that individuals living further away from the referral centre will be less likely to access that service[6].

The clinics in Thaba Nchu district are open 8 hrs a day for five days. Only two clinics operate 24 hrs and 7 days a week. The average distance travelled by patients to their nearest clinics is 11 km and the availability of public transport to some of the clinics is regularly not available. There are areas where there is no route public transport route. People have to travel the average of five kilometres for a public transport. Where taxis have to be used there are instances where patients have to use two taxis to reach the hospital. There are also a large number of patients staying nearer the DJSMH than the clinics. The other areas are situated such that it is easier for people to use the public transport route to the hospital than to the nearest clinics. These situations contribute to some of the factors affecting the referral system within the sub district.

Patients that were registered in the two departments during the study period had to travel the average distance of 24 km to the hospital.

5.9 *KNOWLEDGE PERCEPTION AND EDUCATION OF PATIENT ABOUT REFERRAL SYSTEM*

The study suggests that health professionals are knowledgeable about referral system. Most referrals were from the clinics. General Practitioners also refer patients that cannot managed in their private surgeries to the DJSMH .It was however not the scope of this study to look at the feedback that the DJSMH give to the primary health care providers and general practitioners on patients that have been referred to the DJSMH.

REASONS FOR SELF REFERRAL

The reason for bypassing Primary Health Care Clinics seems to be driven by a number of factors, including the patients' perception of superior quality of care and resource availability in the hospitals, and the fact that for many urban populations, a hospital may simply be the nearest health facility.[6]

The study suggests that most patients bypass the Primary Health Care because they wanted to see the doctor. Some patients rated services at the clinics as poor and not having drugs. The study further indicates bad staff attitude as the reason for some of the self-referred patients.

More accurate and substantial information can be derived from quantitative study where interviews with patients are conducted. The reasons for self referral were based on the recorded data by health workers.

EDUCATION ON REFERRAL SYSTEM

There is no recording on referral system education given to the self referred patients..
The study suggests that the health care workers are not educating patients on referral system.

5.10 *HEALTH PROFESSIONALS WORKING IN THE TWO UNITS*

Staff shortage in the health care facilities is a critical challenge to management and staff rendering care to patient. This is generated by factors such as under funding as well as national shortage of professional skills. Shortage of support workers such as cleaners and porters aggravate the situation of scarce skills as, nurses and doctors have to perform unskilled but essential functions. The study done in hospital suggests that staff shortage compromise patient care and impact on clinical outcomes as well as stress on existing staff[6].

The designated units comprise of the following areas that must be catered for by nurses: history taking, vital signs treatment room plaster of Paris and have to also assist doctors in the consulting and resuscitation rooms. The study showed that the two units are not adequately staffed. This is based on the fact that not all areas in the two departments are provided with the required level of nurses.

HOURS CONTRIBUTED

The number of sub professionals is not adequate thus leading to professional nurses also perform activities that could have been done by other lower category of nurses.
In general nurses contributed more hours than it was planned. Professional nurses had to work overtime to cover for the personnel that took unplanned leaves such as sick leave.

The norm for staffing the units could not be accessed; the findings are based on workload, and organisation of the two departments.

CHAPTER SIX
CONCLUSION

In this chapter, the results are assessed in relation to the aims of the study, so that appropriate conclusions can be drawn. The limitations of the study are also articulated. Appropriate recommendations are made within the context of the findings of the study. Finally, suggestions for further research are presented.

6.1 CONCLUSIONS RELATED TO THE AIMS OF THE STUDY

This was a cross-sectional descriptive study and, therefore, it looked at rather broad issues pertaining to the subject of referral system in public health systems. More qualitative studies need to be conducted which will entail interviews and observations in the outpatient and casualty departments which may either support or disagree with the data as recorded by personnel in the designated units.

6.1.1 CASELOAD OF PATIENTS SEEN IN THE DESIGNATED UNITS IN THE DJSMH

According to the findings of this study, more patients were seen in the Casualty than the Outpatient department. Most patients in the Out patient were seen during the first days of the week. In the Casualty most patients were seen on Saturday and Sundays when out patient department and most of the clinics are closed.

6.1.2 PROFILE OF PATIENTS ATTENDING THE DESIGNATED AREA

The study indicates that the Hospital Outpatient and Casualty departments cater for patients of all ages. More females than males are seen in both designated units. More males were however seen in the Casualty department during the study period. The majority of patients seen in both designated units are Africans. The sub-district is rural and predominantly populated by Africans.

The most five common health problems seen in both units during the study period are: (a) Injury, and poisoning, (b) Respiratory diseases (c) Digestive diseases (d) Circulatory

systems related diseases and (e) Infectious and parasitic diseases. Injury and poisoning are mostly seen in the Casualty as it would be expected. The diseases of Circulatory system are mostly seen in the Out patient department.

Most of the acute cases were seen in the Casualty department after hours during the study period. Some of these acute cases could however still have benefited primary health care clinics. More chronic cases were seen in the Outpatient department. Most patients seen in both designated units were seen and discharged on the same days they were seen. High percentage of admitted patients was seen in the Casualty department.

Categorisation of these patients suggest that only half (49%) of the patients seen during the study period require hospital care. The self referral rate is high in both designated units especially during weekends and after hours and the majority of these patients were acutely ill. The referred patients were mostly from the clinics.

The study suggests that patients still come to the Hospital because they want to be seen by the doctors and after-hours when the PHC clinics are not operating. The patients see PHC services as poor and prefer to come straight to the Hospital.

6.1.3 EFFICIENCY OF THE DESIGNATED UNITS

The findings of the study reflect that there are areas within the units where waiting periods are very long, hence some patients abscond before they are seen by doctors. It is also reflected in the registers that some of the patients who registered as outpatients are never seen during the Outpatient patient working hours as such are seen from the Casualty department after hours. The longest waiting period is between the clerical staff and nursing as well as the doctors. Some of these patients are seen late after the closure of the pharmacy and have to collect treatment the following day.

6.1.4 KNOWLEDGE AND PERCEPTION OF PARTICIPANTS ABOUT THE REFERRAL SYSTEM WITHIN THE SUB-DISTRICT

The referral system is known by the health care workers and most of the patients yet the health workers are doing very little to encourage patients to follow the system.
No education on referral system was reflected in the records of self referred patients. The by pass fee policy is not implemented by health workers.

6.2. LIMITATIONS OF THE STUDY

The following limitations were experienced in conducting this study.

a) The subject is hardly researched in the District Hospitals; therefore the literature related to the subject is scanty.
b) The information collected was limited to the recorded data. Some of the records did not reflect some of the variables that were measured
c) The study was done for just a week. However, this week was randomly chosen and therefore should reflect the general trend of patients seen in the Hospital.

6.3. RECOMMENDATIONS

The recommendations made below are based on findings from this study and suggestions from the personnel of the DJSMH and Primary Health Care Services Management in Thaba Nchu sub-district. The suggestions and recommendations of the Supervisor were also considered.

6.3.1 UTILISATION OF PRIMARY HEALTH CARE SERVICE

A Hospital should focus on the level of care meant for hospitals. The assessment of patients before they are registered might be helpful where patients that have bypass the clinics can be directed to their nearest clinics especially if their illness does not require hospital care. The practice was seen by the researcher to be effective in Johannesburg Hospital in the Gauteng Province. The study found that the bypass fee policy of the Department of Health: Free State is poorly implemented and this policy should be reviewed.

6.3.2 STRENGTHENING REFERRAL SYSTEM STRATEGIES

The education and encouragement for patient to start at the clinics must be intensified and recorded by all health care workers. There must also be triaging of patients especially in casualty department, to ensure that scarce resources are used for those mostly in need. The Emergency Services need to have and implement the criteria for taking patients to the relevant health care facilities.

The outreach visits by medical officers to primary health care clinics need to be intensified.

6.3.3 THE STAFFING PATTERN

The institution should revisit the staffing of both units and do separate staff allocation for the two units. The skills mix of staff should also be revisited for cost effective planning of human resources. This would relieve professional nurses from executing non essential duties and can bring a positive impact in the efficiency service delivery in the two units. The use of flexi hours by medical officers must also be explored to ensure that they are available when they are mostly needed.

6.3.4 MANAGEMENT OF INFORMATION

The analysis and utilisation of the routinely collected data must be done regularly and feedback be given to all relevant stakeholders. This would encourage all staff involved in recording and rendering services to document services they render. This will ensure more accurate and objective planning and allocation of resources.

6.3.5 FUTURE RESEARCH

There is a general need to do more research at Primary Health Care Services and the district hospital. The following areas of research are necessary as the findings would assist health workers and the hospital management in improving implementation of referral system:-

- There is a need to conduct a similar study using a qualitative method, where participants can be engaged in the form of interviews.
- There is a need to conduct research targeting other population of patients

using the hospital services such as Maternity patients.

- The workload and capacity of Primary Health Care Clinics need to be researched, to evaluate how they match the health needs and demand of the populations they serve.

6.5. CONCLUSION

This study was the first of its kind to be done in this DJSMH. Although there are good practices with regard to referral system within the Thaba Nchu sub-district and the DJSMH, much still has to be done to ensure that the primary health care clinics and hospitals are effectively functioning in rendering services relevant to each level of care. The interventions recommended in this study will assist in strengthening the delivery of district health care system and in particular improve the referral system within the sub district.

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ANNEXURE

ANNEXURE A: ETHICS CLEARANCE CERTIFICATE AND

APPROVAL FROM POSTGRADUATE COMMITTEE

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)
R14/49 Mr ME Mojaki

CLEARANCE CERTIFICATE	**Protocol M090119**
PROJECT	School of Public Health Evaluation of Referral System in the Tham Nchu Subdistrict and Dr JS Moroka Hospital
INVESTIGATORS	Mr ME Mojaki.
DEPARTMENT	School of Public Health
DATE CONSIDERED	09.01.30
DECISION OF THE COMMITTEE*	Approved unconditionally

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

DATE 09.02.16 **CHAIRPERSON** .....
(Professor P E Cleaton Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Dr D Basu

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 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...

.....

Faculty of Health Sciences Medical School, 7 York Road, Parktown, 2193
Fax: (011) 717-2119 / Tel: (011)717-2075/6

Reference: Ms Tania van Leeve E-mail: tania.vanleeve@.wits.ac.za

02 March 2009

Person No: 0718886T

PAG

Mr ME Mojaki
P.O. 1469
PO Garapulana
Thaba Nchu
9781
South Africa

Dear Mr Mojaki

Master of Public health (Hospital Management): Approval of Title

We have pleasure in advising that your proposal entitled "*Evaluation of referral system in ThabaNchu Health Sub District and Dr J.S. Moroka Hospital"* has been approved. Please note that any amendments to this title have to be endorsed by the Faculty's higher degrees committee and formally approved.

Yours sincerely

Mrs Sandra Benn
Faculty Registrar
Faculty of Health Sciences

ANNEXURE B: DATA COLLECTION TOOLS

EVALUATION OF REFERRAL SYSTEM IN THABA NCHU HEALTH SUB-DISTRICT AND DR. J.S MOROKA DISTRICT HOSPITAL

Socio-economic Status

Study number:- _____

1.	**Employment**	: Employed		Unemployed	
2.	**Social Grant**	: Yes	1	None	
3.	**Insured (medical aid)**	: Yes	1	None	
4.	**Education**	: None	0	Literate	
		Primary		Matric	
		Post matric		University degree	
		Post graduate			
5.	**Formal Housing**	: Flat / House		Shack	Others
6.	**Indoor Water**	: Yes		No	
7.	**Indoor Flash toilet**	: Yes		No	
8.	**Electricity**	: Yes		No	
9.	**Television**	: Yes		No	
10.	**Radio**	: Yes		No	
11.	**Motor Vehicle**	: Yes		No	
12.	**Fridge**	: Yes		No	
13.	**Washing Machine**	: Yes		No	
14.	**Landline Telephone**	: Yes		No	
15.	**Video Machine**	: Yes		No	
16.	**Microwave**	: Yes		No	

EVALUATION OF REFERRAL SYSTEM IN THABA NCHU HEALTH SUB-DISTRICT AND DR. J.S MOROKA DISTRICT HOSPITAL

Out-Patient Department

STUDY NUMBER:- _____ **DATE:-** _____

RECEPTION

Patient No.:- _____ Time Registered:- _____

(e.g. 09:10, 13:40)

CLERICAL STAFF

Time given file: _____ Age: _____ Gender: Male ☐ Female ☐

Ethnicity African ☐ Coloured ☐ Indian ☐ White ☐

Hospital fee: _____ charged ☐ Not charged ☐

Exempted ☐ Paid ☐ Not paid ☐

Referral from: Clinic ☐ Follow up/ appointments ☐ Private Practitioner ☐

Regional / Tertiary ☐ Self-referral ☐

Reasons for Self-referral:-

_____

_____

NURSE

Time registered by Nurse:- _____

MEDICAL OFFICER

Time seen by Doctor:- _____ Acute ☐ Chronic ☐

Original Diagnosis:- _____

Final Diagnosis:- _____

Justified ☐ Not Justified ☐

Outcome: Discharged ☐ Referred ☐ Admitted ☐

RADIOGRAPHER

Time registered: _____ Time Finished:- _____

PHARMACY

Time seen:- _____

EVALUATION OF REFERRAL SYSTEM IN THABA NCHU HEALTH SUB-DISTRICT AND DR. J.S MOROKA DISTRICT HOSPITAL

Casualty Department ☐

CLERICAL STAFF

Study number:- _____

Time registered:- _____

Age

Gender

Male ☐

Female ☐

Ethnicity ☐

African ☐

Coloured ☐

Indian ☐

White ☐

Referral from:- **Clinic** ☐ **Private** ☐ **Others** ☐ **Self Referral** ☐

Transported by:- **Ambulance** ☐

Police ☐

Private ☐

Paid ☐ Not paid ☐ Exempted ☐

NURSING STAFF

Time seen:- _____

MEDICAL OFFICER

Time seen:- _____

Justified ☐ Not justified ☐

Acute ☐ Chronic ☐

Referral for X-ray:- **Yes** ☐ **No** ☐

Outcome:- **Discharged** ☐

Referred ☐

Admitted ☐