University of the Witwatersrand, Johannesburg.

14th December 2015

Dear Professor Buchmann

My responses to corrections and suggestions from the examiners of my MMed dissertation

1. Is there a historical perspective on how the healthcare system is organised in South Africa? Has the past affected how the current system is structured?
   See Reference 23: A health system that violates patients' rights to access health care addresses this issue. The example of Chris Hani Baragwanath Hospital is given as typical of an apartheid township hospital in section 3.5 page 15, 1st and 3rd paragraphs.

2. What recommendations (policy statement/ white paper) have addressed the issue of referral and how to deal with problems with the referral system?
   There are policies on obstetric referrals, but none specific to gynaecological referrals. Section 3.1 Page 16, last sentence.

3. How is the Gauteng health care system actually structured? Please break it down into central hospitals/Tertiary hospitals, Regional hospitals and district hospitals. Give names and geographical locations. A table (Table 1) has been added on page 18, and is referred to on page 17.

4. Are there any studies that have looked on the implications of inappropriate referral on the healthcare system with respect to budget allocation, staffing and training, healthcare outcomes, quality of healthcare, patient safety and medico-legal issues?
   Yes, inappropriate referral also has significant effects on budget allocation, staffing and training. I have included it in Section 3.4 Page 24, last paragraph.

5. All grammatical, syntactical and typographical pointed out by the examiners have been corrected.

I hope that these changes will meet with your approval

Regards

Esther Rockson

Indications for Referrals to Chris Hani Baragwanath Academic Hospital Gynaecological Outpatients Department

Esther Rockson

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 Medicine in the branch of Obstetrics and Gynaecology

Johannesburg, October 2015

Declaration

I, Esther Rockson, declare that this research report is my own work.

It is being submitted to the Faculty of Health Sciences for the degree of Master of Medicine in Obstetrics and Gynaecology, at the University of the Witwatersrand, Johannesburg.

It has not been submitted before for any other degree or examination at this or any other University.

14th Day of December 2015

Dedication

I dedicate this research report to my loving and supportive husband,

John Fifi Rockson, for his enormous support and encouragement;

and to my son, Ethan Ekow Taonga Rockson.

Abstract

Introduction

Chis Hani Baragwanath Academic Hospital (CHBAH) is a tertiary (level 3) hospital located in Soweto, Johannesburg. There is no currently no fully functioning district hospital in Soweto. The CHBAH Gynaecological Outpatients Department (GOPD) is burdened by large numbers of patients with a case mix from all levels of care.

Objective

To describe the clinical characteristics of patients referred to Chris Hani Baragwanath Academic Hospital Gynaecological Outpatients Department and classify them according to levels of care, to assess the lower level case burden carried by the hospital.

Methods

A prospective cross sectional study was conducted over one week, and 200 participants were selected from the GOPD queue. The researcher interviewed each participant and studied their records to determine their demographic data, reasons for referral and presenting complaints. Upon the participant being seen by the on duty doctor, a provisional diagnosis was made and the appropriate level of care (clinic, level 1 hospital, level 2 hospital, level 3 hospital) was assigned to each based on predetermined classifications of gynaecological conditions into their most suitable levels of care.

Results

One hundred and ninety three (96.5%) of the participants were referred, and seven (3.5%) were brought by paramedics in ambulances. The most common reason for referral was lower abdominal pain and or vaginal bleeding in pregnancy (n=60; 30%), and the majority of these

patients were treated for miscarriages (n=34; 57%). Twenty-four (12%) required admission to hospital. The bulk of patients were classified as level 1 (n=89; 44.5%), with 51 (25.5%) being level 2 and 50 (25%) being level 3 patients. Ten (5.0%) were considered to be primary healthcare (clinic) patients based on their gynaecological conditions.

Conclusion

The study found that the referral system around Soweto is in place and utilized appropriately and the majority of patients were referred. The study further found that CHBAH serves largely as a district hospital for the surrounding clinics. A fully functioning district hospital would likely relieve CHBAH of much of its burden of patients in the GOPD.

Acknowledgements

I would like to acknowledge the CEO at the Chris Hani Baragwanath Academic hospital for allowing me to conduct research at the hospital, and also my fellow registrars and nursing staff in the gynaecological outpatients department for their assistance while I was collecting data.

I owe much gratitude to my mentor and supervisor, Professor E.J Buchmann, for his continuous guidance and support in the organization, analysis and presentation of this research report.

Table of Contents

List of Figures

List of Tables

Abbreviations	
CHBAH	Chris Hani Baragwanath Hospital
GOPD	Gynaecological outpatients department
PHC	Primary Health Care
BMH	Bheki Mlangeni Hospital
A&E	Accident and Emergency
PHCNs	Primary health care nurses
GP	General practitioner
CHC	Community Health Centre
MVA	Manual vacuum aspiration
PID	Pelvic inflammatory disease
SD	Standard deviation
LOF	Lenasia/ Orange Farm
NHI	National Health Insurance

1. Introduction

1.1 Background

In order to ensure that public healthcare facilities are utilised appropriately, an established and working referral system is needed so that each level of care is used appropriately. The South African health system works on a philosophy that uses Primary Health Care (PHC) as its foundation.[1] Referral systems are needed in gynaecology as in many other clinical disciplines.

Currently, large numbers of patients are seen at the Chris Hani Baragwanath Academic Hospital (CHBAH) Gynaecological Outpatients Department (GOPD) every day. There is a general feeling by the doctors that patients seen at the CHBAH GOPD do not represent the clinical profile of patients that should be seen at a tertiary (level 3) hospital, which is the level of care at CHBAH. However, in the Soweto region, with a population of about 1.8 million people, CHBAH is historically the community hospital for Soweto and the only public hospital, and therefore has to provide district (level 1) and regional (level 2) hospital services, in addition to tertiary referral services. Thus, all patients from primary care practitioners (government clinics and private medical practitioners), who might need hospital services whether level 1, 2 or 3, are sent to CHBAH. In effect, CHBAH provides mostly district hospital services, which are, by their nature, non-specialist. On average, around 130 patients, both acute and non-acute, are seen per 24 hours on weekdays, and 80 on weekends.

The recent opening, in April 2014, of a new district hospital in Soweto (Bheki Mlangeni Hospital) is likely to lead to changes in referral routes in Soweto. However, the new hospital, at the time of doing this research project and writing this research report, was not yet fully staffed and only partially functional. When its capacity eventually attained, the hospital should provide relief in terms of the pressure on CHBAH's facilities and also bring more rational and

triaged gynaecological care in the public services of Soweto. While CHBAH will still have to provide level 2 services, the non-specialist load will be removed. It is also envisaged that the new hospital will receive some specialist support from CHBAH, thus allowing it to provide some level 2 functions, albeit in a level 1 hospital.

Currently, the CHBAH GOPD functions both as a clinic for cold referrals, and as a gynaecological emergency department, for 24 hours a day. Previously, there was neither a booking system nor waiting period for the cold cases. Patients could come to the hospital at any time of the day, regardless of their ailment, provided they had a referral letter from their clinic or private practitioner. Both emergencies and 'cold cases' were seen by the nurses in GOPD, before being triaged by the registrar on duty during the day. Patients with non-urgent problems might wait for long periods before being seen by the doctors in GOPD, due to the long queues. Patients with relatively trivial problems that could ideally be dealt with by non-specialists in district hospitals might have been neglected, or taken up the time of specialists who should have been attending to more seriously ill or complicated gynaecological patients. Recently, however, cold cases and emergencies have been separated. There is now a cold case clinic which sees a maximum of 30 patients per day. The doctor in the 'emergency' GOPD screens patients in the queue, and patients with non-urgent problems are then booked to the cold case clinic. The waiting period for the cold case clinic is approximately two to three weeks.

The general Accident and Emergency (A&E) department at CHBAH has no triage system for gynaecology. Female patients presenting to the hospital with gynaecological problems are sent straight to GOPD after stabilisation. This ensures that acutely ill patients are not missed, and are promptly seen. This currently also presents a problem, as detailed clinical

assessments are not made by the A&E doctors, sometimes resulting in patients who should be seen in other clinical departments being sent to GOPD, for instance, a female patient with acute appendicitis being sent to GOPD.

Doctors and Primary Health Care Nurses (PHCNs) in the Soweto clinics use the Essential Medicine List (formerly South African Essential Drug List) and the Primary Clinical Care Manual for management and referral criteria. These manuals provide useful clinical care guidelines, but do not specify the levels of care to which clinical problems must be referred; they only advise referral 'to hospital'.

Overall, the current system in Soweto does not ensure efficient and proper use of a tertiary hospital's resources. The clinics and BMH have no specific gynaecological referral protocols.

1.2 Problem statement

Soon, with improving capacity at the new BMH in Soweto, CHBAH will no longer be the only health facility providing gynaecological hospital services in Soweto. Little is known of the clinical mix of patients presenting at CHBAH GOPD, and how many of these women could potentially be managed at level 1 or level 2 hospitals. To plan clinical treatment and referral protocols and facilities for the primary care services and BMH, the case-mix of CHBAH's gynaecological referrals needs to be determined.

2. Aim and Objectives

2.1 Aim

The aim of this study was to describe current referrals to CHBAH and identify the levels of care required by these patients.

2.2 Objectives:

- To describe demographic and clinical characteristics of patients referred to CHBAH GOPD.
- To classify the patients as level 1, level 2 or level 3 hospital patients, and therefore to assess the appropriateness of each referral to CHBAH GOPD.

3. Literature review

3.1 The concept of referral

Referral is the act of sending someone or something to someone or a place, for consultation, review or further action or to direct someone to a source for help or, information.[2] This is a process where a healthcare provider at one level of care seeks the assistance of a higher level or better resourced facility in taking over the management of a patient. In clinical medicine, patients may be referred from one level of care to another in a hierarchical manner for a number of reasons, which include: 1) patients who present with unclear pathology or symptoms that need further investigations, which are not available and only offered at a higher level facility; 2) patients who have received treatment according to recognised guidelines, and do not show response or improvement in their condition; and 3) patients with investigations that suggest a complex diagnosis requiring treatment at a higher healthcare level, for example, cervical cancer and screening tests that show suspicion for cancer, and require referral to a higher level of care for formal diagnostic testing (colposcopy). Referral can also be to a lower level of care for follow up or rehabilitation once a patient has been stabilized.[3,4] Currently, through national guidelines, there are policies that dictate obstetric referral, but there are no policies in Gauteng Province, or South Africa as whole, for gynaecological referrals.

3.2 The referral system

A referral system is a network between health workers and health facilities within a certain geographical region. The system ensures that there is easy access to an appropriate level of care, in an effective and efficient manner. The network comprises initiating facilities, which refer patients upwards to the receiving facilities. The referring facilities (both private

practitioners and public facilities) and receiving facilities should have clear and open channels for communication to understand their roles, responsibilities and limitations.[4] Making the decision to refer a patient to a higher level of care is made simpler by using set protocols and guidelines.[4] An effective referral system ensures a good working relationship between all levels of care, by ensuring that there is communication both upwards and downwards in the referral network. It is of fundamental importance that health care workers at various levels of care understand the referral pyramid, which outlines which patients are treated at what level of care.[5] The elements of a typical referral system, as exists in South Africa, are shown in Figure 1.

3.3 The South African health care system

There are different levels of government health care services in South Africa, to utilize the scarce resources more efficiently and effectively. These are:

- Primary care, comprising clinics with family physicians, generalist medical officers and PHCNs. Community Health Centres are large clinics that provide more comprehensive services that smaller 'clinics', that are only open during working hours.
- Hospital services, further divided into levels 1 (district hospitals), 2 (regional hospitals), and 3) tertiary and quaternary hospitals.[6, 7]

In Gauteng province, there is a hierarchy of referral, with tertiary, central and district hospitals. These are listed and shown in Table 1.

Table 1. The List of Gauteng hospitals and their geographical locations.[7, 9]

Level of Hospital	Name of Hospital	Geographical Area
Tertiary/ central Hospitals	Chris Hani Baragwanath	Soweto
	Charlotte Maxeke Johannesburg	Parktown
	Dr George Mukhari	Ga Rankuwa
	Steve Biko Academic	Pretoria
Regional Hospitals	Tembisa	Tembisa
	Helen Joseph	Auckland Park
	Kalafong	Pretoria
	Rahima Moosa	Coronationville
	Edenvale	Edenvale
	Leratong	krugersdorp
	Pholosong	Springs
	Sebokeng	Sebokeng
	Tambo Memorial	Boksburg
	Natalspruit	Vosloorus
	Far East Rand	Springs
District Hospitals	Mamelodi	Mamelodi
	Bheki Mlangeni	Jabulani
	South Rand	Johannesburg South
	Bertha Gxowa	Germiston
	Heidelberg	Heidelberg
	Kopanong	Vereeniging
	Pretoria west	Pretoria
	Jubilee	Temba
	Odi	Mabopane
	Carltonville	Carltonville
	Yusuf Dadoo	Krugersdorp
	Tshwane	Pretoria

The facilities and their support structures, for example emergency patient transport, are arranged in a District Health System, with the clinics referring to district hospitals, and district hospitals to regional hospitals, which refer to tertiary hospitals. This referral hierarchy is depicted in Figure 1. The underlying philosophy is that health care services are decentralised to the districts to ensure that basic quality services are easily accessible to all.[8] The health system is structured so that the bulk of patients requiring medical attention enter the system at the Primary Healthcare level, with the exception of accident and emergency patients who can access the hospital services directly. In order for this integrated hierarchy system to function, all components need to work effectively and efficiently together. Support and guidance need to be provided to the clinics and district hospitals to strengthen their function. Since the referral system is integrated, patients referred to higher levels of care can be down-referred back to lower levels once the reason for referral has been resolved.[9]

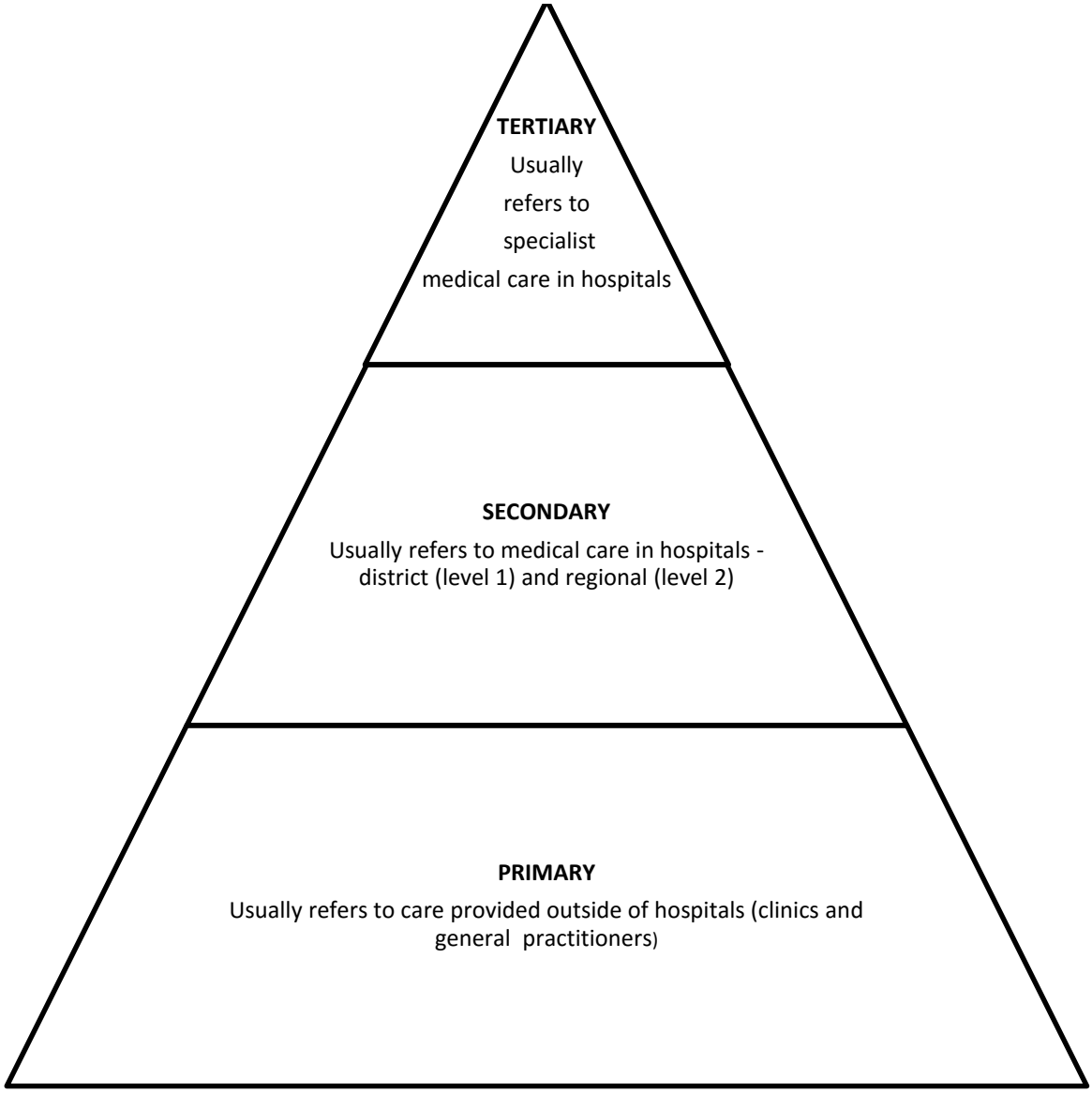

Figure 1. Levels of referral in the South African Health System structure.[9]

3.3.1 Primary care services

These services are the first level of entry for patients, to cover a comprehensive range of preventative, promotional, curative and rehabilitation services. These include antenatal care for expectant mothers, treatment of sexually transmitted infections, and management of chronic conditions such as diabetes, hypertension and mental illness. These are also the first facilities for access to contraceptives, pregnancy confirmation, emergency contraception, post-rape care, and cervical cancer screening. These facilities are predominantly operated by

nurses although doctors are accessible for consultation, support and referral. The national Essential Medicines List (EML) provides guidelines of the medicines that clinics should carry. Stand-alone clinics are the lowest level of care, normally open for eight hours per day, from Monday to Friday.[8]

A larger more comprehensive clinic is the Community Health Centre, which in addition to providing all the services of a normal clinic also provides a 24-hour service, including maternity care, first-trimester termination of pregnancy, and uncomplicated uterine evacuation by manual vacuum aspiration. Family physicians supervise junior doctors who are usually available during working hours. Patients are referred to the next level of care when their needs fall beyond the scope of the clinic staff competence. Every Community Health Centre should be able to provide emergency transport from itself to the referral hospital within one hour. [6, 7, 8]

3.3.2 Hospital Services

There are three levels of hospitals. Level 1 hospitals (district hospitals) offer in-patient services, supervised by doctors, including obstetrics and gynaecology. Gynaecological facilities should include ultrasound, endometrial biopsy, second-trimester termination of pregnancy, laparotomy for tubal pregnancy, and tubal ligation. The route of referral from level 1 is to a level 2 hospital.[8]

Level 2 hospitals (regional hospitals) should have a specialist gynaecologist on the staff, and be able to perform general specialist functions, including running a dedicated gynaecology clinic and having dedicated gynaecology theatre lists, where operations such as hysterectomy for benign conditions, endoscopic procedures and other surgery may be performed. [6, 8, 9, 10]

Level 3 hospitals (tertiary hospitals) give specialist support to the level 2 hospitals. Specialist and sub-specialist care is provided, and in South Africa these hospitals are further subdivided into provincial tertiary, national central and specialised hospitals. National central hospitals and specialised hospitals are highly specialised tertiary hospitals that may also offer certain quaternary services, for example in-vitro fertilisation for infertility. The emphasis is on high cost and low volume services using sophisticated technology and highly trained sub-specialists. [8, 10]

Primary health care providers (clinics, community health centres, and general practitioners) should generally refer patients to a district hospital, which is a level higher than theirs. They can however refer complicated patients straight to a regional or tertiary hospital, bypassing the district hospital level, provided that proper referral guidelines and protocols are followed. This ensures timeous management of the patient at the correct level of care.[12, 13]

A good referral system is necessary because it ensures that appropriate levels of care are made available considering geographic factors, time and cost. It also promotes cooperation and complementation of primary, secondary and tertiary health facilities. It also avoids duplication of services.[13]

The commonest form of communication between referring centres occurs through standardized referral letters or forms. These serve as channels for clinical information about patients to be passed upwards and downwards in the referral network. It is essential that health care workers at lower levels are aware of the specialist clinics at higher levels to refer

patients appropriately. The practice of bypassing the lower levels of health care leads to long waiting hours, and misapplication of specialist skills.[12, 13]

3.3.3 Private general practitioners and National Health Insurance

Private general practitioners currently function outside the public health system but are an important part of the referral system. They refer patients to both public and private hospitals. The South African National Health Insurance (NHI) is expected to be implemented in phases over a period of 14 years. The main aim of the NHI is to ensure that all citizens and legal residents of South Africa receive appropriate and efficient healthcare. General Practitioners and primary healthcare providers will all be incorporated into the NHI system as accredited service providers. There is currently inequity in accessing proper and appropriate medical care between patients in the public and private sectors. The South African NHI intends to address these inequalities between the private and public sectors.[14] The system will encourage healthcare users to enter into the health system at the primary healthcare level; this will in turn then reduce the cost burden on the higher levels of care. The NHI system intends to strengthen the district hospitals by providing clear protocols and referral guidelines, to ensure that each level of care has the appropriate delivery package. Delivery of PHC services and outreach will be facilitated by implementation of three support streams – the district clinical specialist teams (DCSTs), the community health workers in the ward-based outreach teams and the school health teams. The DCSTs include a paediatrician, obstetrician and gynaecologist, anaesthetist and a family physician in each district. The specialist support aims to ensure that there is a reduction in maternal and child mortality, and also to improve the health outcomes at district level.[15, 16]

3.4 Implications of referrals

Appropriate referrals ensure that patients that need higher levels of medical care are properly investigated and managed timeously. This largely depends on the knowledge and skills of the health practitioner at the primary level, to make the referral. The use of clinical protocols facilitates this process. Such protocols should be clear to those using them, so that patients who need to be managed at lower levels, such as clinics and district hospitals, are managed correctly at those levels, and those that need hospital specialist services are referred promptly.[17] Overlapping sets of demographic and geographic factors play an important role in determining the balance of referral care – namely population size, population density, terrain, distances between main urban centres and access to health facilities. General and health systems determinants for referral include cultural and political factors, availability of trained personnel at lower levels of care, distances between the referring facilities, and pattern and burden of disease. Good support from referral hospitals with outreach programs to the primary health care facilities ensures that patients get access to better health care. Highly skilled or specialist personnel can be recruited from the hospitals to provide these services. While strengthening primary care and district hospital services seems appropriate, this should not be at the cost of cutting resources at the referral hospitals. Weak referral centres can similarly destabilise the system in the face of large patient loads .[18]

Inappropriate referrals have significant adverse impact on wider healthcare outcomes, such as budget allocation, staffing and training.[6, 8, 10,13,21,33] Detailed discussion of these aspects falls beyond the scope of this research report.

3.5 The African Experience

A study in Zimbabwe in 1998 looked at the health care referral system in the country. The aim was to assess the functioning of the pyramidal referral system at three hospitals in two rural districts near Harare. The authors used pneumonia in children and malaria in adults as two common indicator diseases. The study found that most patients attending the highest level referral facility were inappropriately admitted to hospital. For pneumonia, 54% of patients seen at tertiary level and 57% at quaternary hospital were of mild severity. Similarly, for malaria, 82% seen at tertiary level and 54% at quaternary level were of mild severity. It was found that the majority of patients did not follow the referral system and had used the hospital as the first point of entry into the health system. The study recommended that peripheral facilities needed to be improved and supported to fulfil their role in the referral network. The study authors contended that an improvement in level 2 hospitals would lead to a decline in the number of inappropriate level 3 referrals, and therefore reduce cost pressures at the tertiary level.[19] The study further recommended that where national referral centres existed, intermediate level facilities needed to be developed to create functional 'splits' within the referral hospitals so as to formally allow different levels of care to be delivered within the same institution. This might reduce the number of inappropriate primary referrals to the specialist or subspecialist levels and help to redistribute resources to underserved areas. The implications of inappropriate referrals can be severe on both the health system and the patients. With more patients referred inappropriately, staffs in referral hospitals are overwhelmed with large patient volumes.[19]

A study done in Ilorin, Nigeria in 2004 assessed the referral system at a tertiary hospital. In the study, only 7.1% of all new cases attending the hospital went through the correct referral system, while the majority had their first entry into the health system at the tertiary hospital. This supported the observation that outpatient departments in tertiary hospitals are overcrowded with patients that could be treated at primary health care centres. The study also showed that most of these patients presented between 06:00 and 14:00, suggesting that they did not consult earlier in the day at lower level health facilities.[20]

A qualitative study from two districts in Zimbabwe in 1998 assessed the referral system at district level, and the implications on efficiency and effective service delivery. Although it was not specific to gynaecological patients, the study found that users of the service did not understand the role of a hospital in relation to a community health centre, nor the functional differences between the two types of facilities. Patients assumed that the natural first entry into the health system could be the hospital. The study also showed that there was no effective communication system between the service providers and the users.[21]

A study done at Muhimbili National hospital in Tanzania in 2008, examined medical referral patterns of patients, in order to strengthen the referral system. The study showed that most patients that presented were self-referrals and the majority (70%) required admission, suggesting that they had genuine reasons for seeking health care. Of all the patients admitted, 70% were classified as level 1. This indicated that a large proportion of these patients were inappropriate for this level 2 hospital.[22]

In principle, patients should enter the system at the clinic level and then be referred upwards. In practice, both weakness of the referral system and a lack of comprehensive hospital

coverage mean that regional and central hospitals often accommodate patients that ought to be treated in hospitals at levels below or above them. In South Africa, this is particularly the case with formerly black hospitals because of the patchy provision of hospitals in the apartheid era.[23] The current health service inherited this system. Traditionally, each large township that housed the black urban workforce had to have one hospital. Chris Hani Baragwanath Hospital is an example of a district hospital that had to serve a very large township (Soweto), which then became a tertiary hospital because of its sheer size and the involvement of university medical school.[7, 23, 24]

A study done at the Dr JS Moroka District Hospital in the Free State, in 2010, showed that there was an ineffective referral system for that district hospital. Some of the reasons given for patients not following the referral hierarchy were: 1) wants to be seen by a doctor (47%); 2) poor services at the primary care clinics (32%); 3) residing near the hospital (8%); 4) no treatment at the clinics (7%); 5) did not know about the referral system (2%); and 6) poor staff attitude at clinics (4%). Suggesting improvements, the authors recommended regular visits by hospital doctors to the clinic facilities, flexible and longer operating hours, and more functional clinics with better resources and regular medical supplies.[24]

There are few studies on the referral implications for large South African township hospitals that perform all levels of hospital care, as is the case at CHBAH. Just one related study was done, in 1994, specifically on gynaecological referrals to CHBAH. The authors compared the quality of referral letters from referring private medical practitioners and the clinic PHCNs. The letters from the private doctors contained significantly less clinical information than those from clinics. However, the study found no significant differences in the number of

appropriate referrals or incorrect diagnoses from the clinics and private doctors, respectively. The authors did not subdivide the referrals into hospital level 1, level 2 and level 3.[25]

3.6 Experience in high income countries

In contrast to healthcare systems in low and middle income countries, referral systems and networks in developed countries are better established. They have well-functioning primary health care facilities and GP practices. There is communication within the system. A survey done in Scotland showed that the use of outreach clinics improved access to specialist care, creating better communication between primary health care providers and specialists. This avoided clinic appointments and inappropriate investigations, and therefore also reduced inappropriate referrals.[26]

The gynaecological outpatients department at Katiloopisto maternity hospital in Helsinki, Finland sees patients on an appointment basis for different gynaecological diseases or symptoms. Appointments can be made telephonically. This ensures timeous and planned referral of patients to the hospital. The hospital also has a gynaecological emergency unit that treats gynaecological patients and pregnant women up to the 22nd week of pregnancy who require emergency care.[27]

King Edward Memorial hospital in Australia is a tertiary hospital that has a well-established referral network. The gynaecological department has special clinics that are conducted on a daily basis. A set of guidelines is provided for the referring centres and private practitioners, with pre-requisite tests and investigations required before a patient is referred. The hospital uses clinical priority access criteria for outpatient first assessment. The hospital has a 24-hour

emergency unit for acute cases. Urgent referrals are seen within 2 weeks, semi-urgent referrals are seen within one month, and routine check-ups are seen within 6 months. [28]

However, there are challenges in referral even in high-income countries. A study from the United Kingdom's National Health Service in Cambridge in 1994 looked at the appropriateness of referrals and reasons for inappropriate referrals. The study showed that 34% of inappropriate referrals were avoidable, related to lack of resources, lack of information, deficient primary care resources and lack of direct access to the general practitioners.[29]

Methodology

4.1 Study design and setting

This was a prospective cross sectional study, conducted in the CHBAH GOPD. CHBAH is a tertiary referral hospital that also performs district and regional referral functions for Soweto, as well as for the Lenasia and Orange Farm area, south of Soweto. The GOPD is a 24-hour unit that attends to all new gynaecological patients, self-referred via the CHBAH A&E department, or referred by Soweto clinics or private practitioners. The referring clinics have a standard referral form that patients bring with them to CHBAH. Some referrals come from other hospitals in Gauteng or the North-West Province, and a number of patients are referred from other clinical departments in CHBAH. There is an on duty registrar and one other junior doctor assigned per 24 hour shift, with a specialist on call. After consultation and performance of procedures if needed, patients may be discharged back to their referring clinics or hospitals, may be asked to return for follow-up, or may be admitted in the wards.

4.2 Study population and sampling

The study population was all patients presenting to GOPD for the first time. A period sample was used for the study. The researcher selected periods of time during which she briefly interviewed (but not consulted) all patients presenting at GOPD, to represent a typical working week. The time periods chosen were Tuesday, 10 June from 07:00 to 16:00, Wednesday night 11 June from 16:00 to 07:00, and Saturday 15 June 2014 from 08:00 to 20:00. Participants were recruited from the queue at which they completed their administrative clerking at the GOPD reception. This sampling method was expected to provide approximately 200 patients for analysis, based on current daily attendance statistics. The only exclusion criteria were patients aged less than 18 years (who could not give consent

without parental supervision according to the law), certain seriously ill patients who were incapable of giving informed consent, and those declining to participate.

4.3 Data collection

After obtaining signed informed consent, the researcher interviewed patients in the queue and analysed their referral letters, to establish the reason for presentation. This was done before the patients were attended by the doctors on duty. The number of under-18 patients and those declining participation was noted. Basic demographic data were entered including place of residence, as well as the referring facility (private practitioner, clinic, CHC, hospital, and whether referred by a doctor or nurse). The areas of Soweto, Orange Farm and Lenasia were considered as the CHBAH catchment area. The reason for referral and presentation was noted, with a provisional classification as appropriate for hospital referral level 1, level 2 or level 3. (Table 2)

There is no validated classification of gynaecological patients into levels of care internationally or locally. The classification used in this study was made using the South African EML (formerly EDL), the Primary Clinical Care Manual, Essential O&G Guidelines for District hospitals and Clinical Gynaecology. Table 1 illustrates the classification of disease groups according to different levels of care. [30, 31, 32, 33]

In GOPD, patients were seen by the duty doctor, and based on the presenting complaint, physical examination and procedures done; they were given a provisional diagnosis. For simplicity and easier categorization, the provisional diagnoses were then clustered into disease groups. Women admitted to CHBAH were followed up for 24 hours and their classification of level of care was changed if necessary, based on the further care provided.

Table 2. Classification of disease groups according to their levels of care.

Primary Health Care	Level 1(District Hospitals)	Level 2 (Regional Hospitals)	Level 3 (Tertiary Hospitals)
- Family planning and contraception - Uncomplicated STIs - Cervical cancer screening - First trimester termination of pregnancy - Dysmenorrhea - Uncomplicated vaginal discharge or bleeding in reproductive women - PID Grade 1	- STIs, lower abdominal pain or bleeding not responding to clinic management - Ectopic pregnancy - Acute and chronic vaginal bleeding - Secondary dysmenorrhea - Menorrhagia due fibroids - Second trimester miscarriages - Incomplete abortion - Threatened miscarriage - Septic miscarriage, with no septicaemia - PID 2and 3 - Genital warts for cautery - Advanced cancer- for palliative, supportive care - Rape cases - Non-invasive investigation of secondary infertility - Tubal ligation - Complications of contraception - Bartholin's abscess and cyst - Amenorrhea	- Early pregnancy complications (septic abortion or ectopic pregnancy in need of ICU support - Termination of pregnancy for women with underlying medical conditions - PID Grade 3 or 4 - Rape with evidence of serious trauma - Abnormal uterine bleeding with an organic cause (polyps, fibroids, for myomectomy or hysterectomy) - Ovarian cysts in reproductive women - Menorrhagia not responding to medical treatment or with suspicion for cancer - Infertility for non-invasive investigation - Endometriosis - Vulvar, vaginal and uterine lesions with suspicion for cancer - Post-menopausal bleeding	- Premature menopause - All confirmed gynaecological cancers - Gestational trophoblastic disease - Secondary dysmenorrhea with organic cause - Genital fistulae - Primary amenorrhea in > 18yrs, intersex - Mid-trimester miscarriages with: congenital abnormalities; cervical incompetence; recurrent miscarriages; patients with immunological conditions

	- Premalignant lesions of the cervix.	Hormone replacement therapy	

4.4 Data management and analysis

Data was entered on Microsoft Excel and then exported to Stata 11software (Statacorp, College Station, Texas, USA) for analysis. Descriptive data analysis techniques were used. For categorical variables, proportions and percentages were used. For continuous variables, means ± standard deviations (SDs), or medians with ranges, were used. To express precision of point estimates, 95% confidence intervals were given where appropriate.

4.5 Permission and ethical issues

Permission to conduct the research at CHBAH was obtained from the hospital CEO. Ethical approval for doing the study was granted by the Human Research Ethics Committee of the University of the Witwatersrand. Patient confidentiality was maintained and no names or personal identifiers were entered on the data sheets. The patient information and consent form is attached as appendix B, and the Ethics approval certificate, as appendix C.

4.6 Funding

Data capture was performed by the researcher. Stationery was funded by the researcher, and data analysis was done without charge by the researcher's supervisor.

5. Results

During the periods of data collection, 204 patients were approached to be recruited into the study. Four patients were excluded, two of whom were under the age of 18 years, and two who declined to participate in the interview due to pain. This left 200 patients for analysis.

5.1 Consultation times

The peak period for the number of patients seen was from 11:00 to 13:00 was 70 (35%). There was another peak from 16:00 and 17:00. (n=70; 35 %).

5.2 Age distribution

The mean age for patients in the study was 35.4 years (SD±12.9). The youngest patient was 18 years old and the oldest was 97 years old. Women in age group 18-28 made up 35% of the study sample (Figure 2).

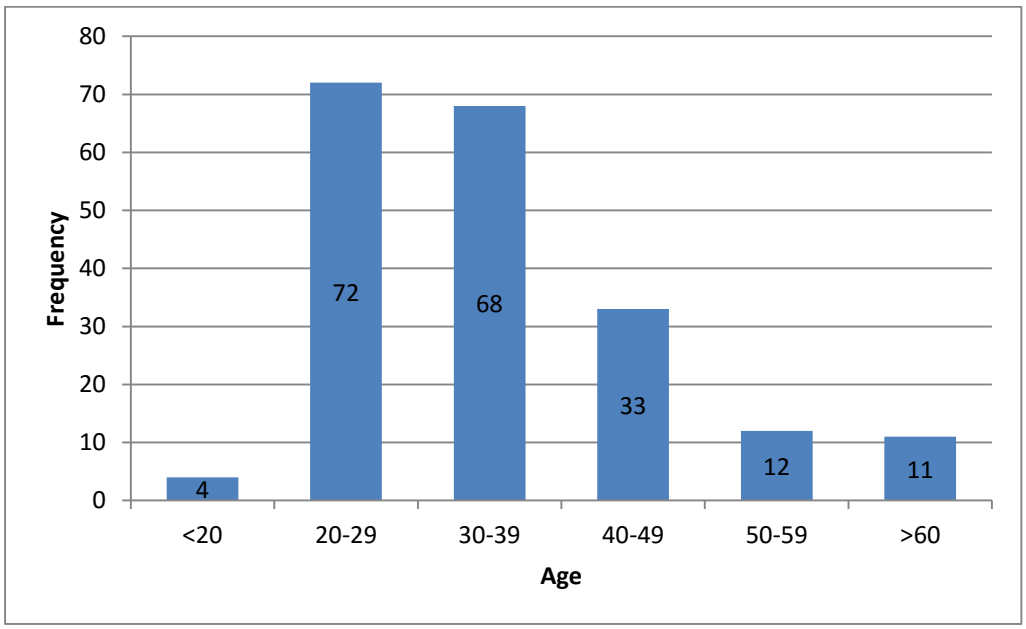

Figure 2. The frequencies of different age groups, in patients who presented at CHBAH Gynaecological Outpatients Department (n=200)

Most of the patients (n=138; 69%) came from the Soweto region, with 54 (27%) from Lenasia and Orange Farm. The 8 remaining patients (4%) resided in other areas, including Ekurhuleni, Roodepoort and Johannesburg southern suburbs (Table 3).

5.3 Referral

One hundred and ninety three (96.5%) patients had referral letters and 7 patients (3.5%) did not. All of the latter were emergencies brought by ambulance transport. Urine pregnancy tests were done routinely on all patients in the reproductive age group (<50 years) on arrival at the GOPD. Seventy-nine patients (39.5%) had positive pregnancy tests.

Table 3. Referring centres and departments, with numbers of patients referred to CHBAH GOPD (n=200).

Centre/ department	Source	Number	Percentage
Other departments within CHBAH	CHBAH	27	13.5
General practitioners	GP	24	12.0
Zola	S	15	7.5
Lillian Ngoyi	S	13	6.5
Chiawelo	S	13	6.5
Lenasia South	LOF	12	6.0
Mofolo	S	11	5.5
Diepkloof	S	10	5.0
Stretford	LOF	10	5.0
Itireleng	S	8	4.0
Ambulance transfer from home	Self	7	3.5
Zola-Jabulani Hospital	S	6	3.0
Green Village	S	5	2.5
Tladi	S	4	2.0
Lenasia	LOF	4	2.0
Meadowlands	S	4	2.0
Pimville	S	3	1.5
Sebokeng Hospital	Other	2	1.0
Helderkruin	Other	2	1.0
Moroka	S	2	1.0
Other (Lenasia, Orange Farm)	LOF	8	4.0
Other (soweto)	S	6	3.0
Others	Other	4	2.0

S= Soweto, LOF= Lenasia and Orange, GP= General Practictioner

5.4 Reason for referral or presenting complaint

The most common reason for referral was lower abdominal pain and or vaginal bleeding in pregnancy (n=60; 30%). Ten (5%) patients were referred for cervical cancer screening, and there were 15 (7.5%) patients with an abdominal mass. There were patients who were referred for other medical or surgical conditions that were not gynaecological conditions (n=13; 6.5 %). (Table 4).

Table 4. Classification of patients according to their presenting complaint or reason for referral.

Referral reason or presenting complaint	Number	Percentage
Lower Abdominal pain and/or vaginal bleeding in pregnancy	60	30
Vaginal bleeding in non-pregnant women	37	18.5
Lower abdominal pain	33	16.6
Abdominal mass	15	7.5
Other medical or surgical conditions	13	6.5
Cervical cancer screening	10	5
Infertility	9	4.5
Amenorrhea	6	3
Vaginal discharge in non-pregnant women	6	3
Infertility	6	3
Vulvar infections / abscesses	3	1.5
Pelvic organ prolapse	2	1

5.5 Provisional Diagnosis

The provisional diagnoses are listed in Table 3. Most patients that presented to GOPD were treated for miscarriages, 34 for complete or incomplete miscarriage (16.9%), and 31 for threatened miscarriages (10.4%). Sixteen patients (7.9%) had gynaecological malignancies. Most of these 16 patients were diagnosed clinically as they had advanced disease. There were

11 patients (5.5%) with cancer of the cervix, 3 patients (1.4%) with endometrial cancer, 1(0.5%) with ovarian cancer and 1 (0.5%) with vulvar cancer. There were 26 (12.9%) patients who were seen and found to have other medical or surgical conditions, and no evidence of gynaecological pathology, such as irritable bowel syndrome and pyelonephritis. (Table 5)

Table 5. Classification of patients according to their provisional diagnosis in GOPD.

Provisional Diagnosis	**Frequency (n)**	**Percentage (%)**
Incomplete or complete miscarriage	34	17
Non-gynaecological conditions	26	13
Threatened miscarriage	21	10.5
Uterine fibroids	20	10
Pelvic infections	16	8
Gynaecological cancers	16	8
Premalignant lesions of the cervix and uterus	13	6.5
Ovarian cysts	12	6
Ectopic pregnancy	10	5
Menstrual disorders	8	4
Infertility	8	4
Post-menopausal bleeding	4	2
Genital warts	3	1.5
Menopause	3	1.5
Bartholin's abscess	3	1.5
Gestational trophoblastic disease	2	1
Pelvic organ prolapse	1	0.5

5.6 Procedures done in GOPD

The procedures done in GOPD included ultrasound scans, MVA (manual vacuum aspiration) and biopsies (vulvar, cervical and endometrial biopsies) (Table 6).

Table 6. Diagnostic and therapeutic procedures done in GOPD.

Procedure	Frequency (n)	Percentage (%)
Ultrasound scan	165	82.5
MVA	22	11
Biopsy	17	8.5

5.7 Admissions

Twenty-four (12%) patients were admitted to hospital. Those who were not admitted were either discharged back to their local clinics or given review dates at the hospital follow-up clinic.

5.8 Follow up

One hundred and ten (55%) patients needed to be seen again at the hospital follow-up clinic for review, for histopathology or blood results, and/or repeat assessment or investigations.

5.9 Assessment of levels of care

Table 7 shows the classification of patients after diagnosis, according to their level of care. The bulk of patients seen were level 1 patients (n=89; 44.5%). Fifty-one (25.5%) were level 2 patients, 50 (25.0%) were level 3 patients and 10 (5.0%) were classified as primary healthcare (clinic or Community Health Centre) patients (Figure 3). Some of the patients who were classified into the primary healthcare group were staff members who attended GOPD as it was convenient, but had trivial ailments. (n=3; 1.5%).

Table 7. Classification of provisional diagnoses according to levels of care.

	Primary care		**Level 1**		**Level 2**		**Level 3**	
Provisional diagnoses	(n)	%	(n)	%	(n)	%	(n)	%
Threatened Miscarriage			21	10.5				
Miscarriages	1	0.5	30	15	2	1	2	1
Ectopic Pregnancy			4	2	4	2	2	1
Gynaecological Cancers							15	7.5
Post-menopausal bleeding							4	2
Uterine Fibroids			3	1.5	9	4.5	8	4
Pelvic Infections	1	0.5	8	4	6	3	1	0.5
Infertility					7	3.5	1	0.5
Pre-malignant cervical lesions	3	1.5	4	2	4	2	2	1
Menstrual Disorders	3	1.5	3	1.5	1	0.5	1	0.5
Pelvic Organ Prolapse							1	0.5
Ovarian Cysts					9	4.5	3	1.5
Genital Warts			1	0.5	1	0.5	1	0.5
Menopause							3	1.5
Bartholin's Abscess			3	1.5				
Other	3	1.5	12	6	8	4	5	2.5
Total	10	5.0	89	44.5	51	25.5	50	25.0

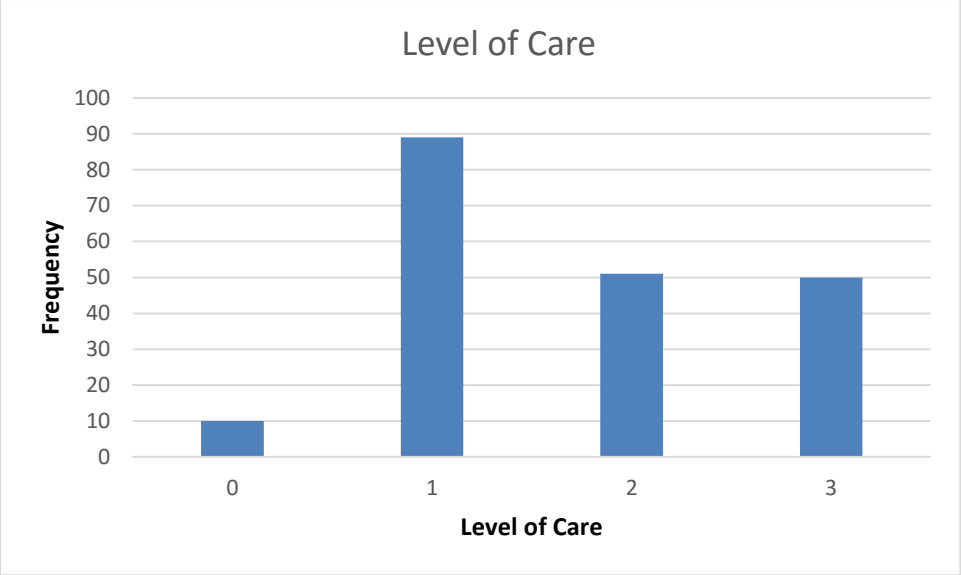

Figure 3. Classification of patients according to their levels of care.

6. Discussion

6.1 Main findings

To the best of the author's knowledge, this study is the first to look at gynaecological referrals in South Africa, aside from the study done by Buchmann et al that looked at the quality of gynaecological referral letters of patients sent to CHBAH Gynaecological outpatients department.[25]

The main finding of this study was that the CHBAH GOPD was attending to patients at all levels of care. The results confirmed that the hospital largely functions as a district (level 1) hospital with some level 2 and level 3 functions. During the week of data collection, the management of Bheki Mlangeni Hospital were still establishing their gynaecological unit. Overall however, the referral system is in place as 95% of the patients who presented to GOPD needed hospital (at least level 1) services. There was only one self-referred walk-in patient. This is similar to the practice in King Edward Memorial Hospital in Western Australia, which only sees referred patients.[29] The results show that the referral system observed in Soweto was working better than what was observed in Tanzania's Muhimbili National Hospital,[22] and another tertiary hospital in northern Nigeria where patients made their first point of entry into the health system at the tertiary hospital.[20] CHBAH largely functions as a district hospital to many clinics and CHCs as this is currently their only point of entry into the hospital system.

Fifty five percent of the women seen at GOPD needed to be followed up at the hospital for histopathology, blood results, and review or repeat ultrasound scan. This shows that these patients needed some hospital services, but not necessarily level 3 hospital services, as supported by the results of the levels of care. BMH has the potential to reduce the level 1 and

level 2 burdens from CHBAH by taking over these cold cases. This new hospital at the time of writing had partially taken over only three CHCs (Mofolo, Zola and Itireleng). This means that the other seven CHCs and clinics around Lenasia and Orange Farm still continue to refer exclusively to CHBAH. The fact that primary healthcare facilities refer directly to a tertiary hospital is also observed in high income countries where they there is a strong referral framework between the general practitioners, clinics and the hospitals.

6.2 Strengths and limitations

A strength of this study is that the information obtained has not been available before. The results give an idea of gynaecological levels of care and referral requirements, at least for densely populated urban areas similar to Soweto. Another strength is that CHBAH is the single hospital for Soweto, thus giving full case-mix information on the gynaecological conditions that require hospital care. This study is generalizable and relevant to urban Southern Africa, as the same disease patterns are likely to be observed throughout.

Due to this being a period sample, certain characteristics associated with that period might be under- or over-represented. Information on under-18s was not available, because the law prevents research on minors without parental consent. There is a possibility of selection bias as this was a convenience sample, to facilitate all the data being collected by the researcher alone. It is therefore not a random sample of the week. The sample therefore only gives a snap-shot of the case mix during the periods of data collection at CHBAH. Another limitation is that certain disease groups have heterogeneity or complexities, and these were not captured in the descriptions in the levels of care. The definitions used were also not previously validated because no validated definitions could be found in the literature.

6.3 Recommendations

6.3.1 For research

It would be useful to investigate referrals in larger centres and rural regional hospitals, to derive a general national picture. It would also be useful to see if they replicate these results. This study could also be repeated at CHBAH once BMH is fully functional, to compare the levels of care seen before and after its opening. Then a comparative assessment could be made as to whether the new hospital is helping reduce the large level one patient load off CHBAH.

6.3.2 For clinical and public health practice.

The results of this study can inform managers at different levels of care about the possible case-mix in gynaecological patients, and how to adjust and plan services accordingly. This will also help in the writing of protocols and simple referral guidelines for the clinics and BMH to give guidance as to which patients should go to level 1 hospitals, and which should go to specialist levels of care.

Efforts to improve referrals to higher level facilities require that level 1 and level 2 hospitals are strengthened and increased in numbers to lessen the burden of inappropriate referrals in tertiary facilities.

7. References

1. Kautzky K, Tollman S. A perspective on Primary health care in South Africa. www.hst.org.za/uploads/files/chap2_08.pdf (Accessed 11 September 2015)
2. Hornby S. Oxford advanced learner's dictionary - Sixth edition. Oxford, Oxford University Press, 2000.
3. Davies P, Pool R, Smelt G. What do we actually know about the referral process? Br J Gen Prac 2011; 61: 752-753.
4. World Health Organization. Referral systems – a summary of key processes to guide health services managers. www.who.int/Referralnotes.doc (Accessed 11 September 2015)
5. World Health Organization. Management of health facilities: referral systemswww.who.int/management/facility/referral (Accessed 11 September 2015)
6. Department of Health, South Africa. A district hospital service package for South Africa – A set of norms and standards. Pretoria, Department of Health, 2002. www.kznhealth.gov.za/norms.pdf. (Accessed 11 September 2015)
7. Department of Health, South Africa. Policy on management of public hospitals. www.gov.za/../nationa-health-act-policy-management-public-hospits. (Accessed 11 September 2015)
8. Von Holdt K, Murphy M. Public hospitals in South Africa: Stressed institutions, disempowered management. In: Buhlungu S, Daniel J, Southall R, Lutchman J, editors. State of the nation South Africa 2007, HSRC press, Cape Town. 312-341
9. Gauteng Department of Health – Health referral system policy. Johannesburg: Gauteng Department of Health, 2014.

10. Cullinan K. Health Services in South Africa: A basic introduction. Health-e News Service, January 2006. www.health-e.org.za/2006/01/29/health-services-in-south-africa-a-basic-introduction. (Accessed 11 September 2015)
11. Ludke RL. An examination of factors that influence referral decisions. Ann Fam Med 2004; 2: 245-252.
12. Mashishi M. Assessment of referrals to a district hospital maternity unit in South Africa. MMed dissertation, University of the Witwatersrand, South Africa, 200x. Wiredspace.wits.ac.za/handle/10539/13656. (Accessed 11 September 2015)
13. Chukwuemeka AI, Iyoke A, Ugwu GO. Challenges associated with the management of gynaecological cancers. Int J Womens Health. 2014; 6:123-130.
14. Department of Health, South Africa. Green paper: National Health Insurance in South Africa – policy paper. Pretoria, Department of Health, 2011. www.hst.org.za. (accessed 11 September 2015)
15. Matsoso MP. National Health Insurance: The first 18 months. S Afr Med J 2013; 103
16. National Health Insurance, South Africa. Health reform note 7. The Brazilian primary healthcare delivery model. October 2010. www.nhisa.co.za/F_Econex.asp. (Accessed 11 September 2015)
17. Northern Mallee Primary Care Partnership. Referral guidelines and protocols July 2012. www.nmcp.org.au/userfiles/northern_mallee_primary_care_partnership.pdf. (Accessed 11 September 2015)
18. Hensher M, Price M, Adomakoh Referral hospitals. In: Disease control priorities in developing countries. Second edition. New York: Oxford University Press; 2006: 1229-1244.
19. Saunders W, Kravitz J, Lewin S. Zimbabwe's hospital referral system: does it work? Health Policy Plan. 1998 Dec; 13(4):359-370.

20. Akande TM. Referral system in Nigeria: study of a tertiary health facility. Ann Afr Med 2004; 3: 130-133.
21. Hongoro C, Musonza T, Macq J, Anozie. A qualitative assessment of the referral system at district level in Zimbabwe: implications on efficiency. Cent Afr Med J 1998; 44: 93-97.
22. Simba DO, Mbembati NA, Museru LM. Referral pattern of patients received at the national referral hospital: challenges in low income countries. East Afr J Public Health 2008; 5: 6-9.
23. Dhai A. A health system that violates patients' rights to access health care. S Afr J Bioeth Law 2012; 5: 2-3.
24. Mojaki M. Referral steps in district health system are side-stepped. S Afr Med J 2011; 101: 109.
25. Buchmann E, Ephraim G, Kathawaroo S. Gynaecological Referrals to Baragwanath Hospital. S Afr Med J 1994; 84: 200-203.
26. Elwyn G, Stott H. Avoidable referrals? Analysis of 170 consecutive referrals to secondary care. BMJ 1994; 309: 576-578.
27. Hospital District of Helsinki and Uusima, Katiloopisto Maternity Hospital. Care of gynaecology patients. www.hus.fi/en/hospitals/hospital/care-of-gynecology-patients.aspx 16 (Accessed 11 September 2015)
28. King Edward Memorial Hospital. Specialist outpatient department referral directory 2010. www.kemh.health.wa.gov.au(Accessed 11 September 2015)
29. Scotland Health Department. Health care improvement Scotland: Improving productivity and efficiency in outpatients clinics.2012. www.qihub.scot.nhs.uk/media/509051 (Accessed 11 September 2015)

30. Department of Health. Standard treatment guidelines and essential medicines List for South Africa – hospital level – adults. 2012 Edition. Pretoria, Department of Health, 2012.
31. Breen M. Essential O&G Guidelines for district hospitals. Second Edition. Empangeni, South Africa: Dr Michael Breen, 1999.
32. Primary clinical care manual – A practical guide for primary health care personnel in clinical setting. Johannesburg. Jacana Media, 2005.
33. Management of gynaecological patients at the appropriate level of care. In: Kruger TF, Botha MH, editors. Clinical Gynaecology. Fourth Edition. Cape Town: Juta, 2011: 735-738.

Appendix A: Data sheet

Study number……..…….

Date…… Time of registration……..(to the nearest hour passed)

Time of consultation ……..

Age……. Address (township/town only) …….

Referred / self-referred Referral letter: Y / N

Clinic / Hospital / GP/ Other ……

Pregnant Y / N

Been to GOPD before as : Inpatient / Outpatient / No

Reason for referral or presenting complaint(s) according to patient……

How long has patient had complaint?.....days/…….weeks/……..months/……years?

Have presented with the same problem before? Yes / No

If yes, how many times? 1, 2, >3

Not Admitted-

Procedure done in GOPD: ……
….

- Ultrasound
- Manual vacuum aspiration
- Biopsy (endometrial, cervical and vulvar)
- Other

Provisional Diagnosis……
……

Admission

Emergency:

Elective, appointment given

Need for surgery: specialist / Registrar or MO

Follow up at CHBAH: Needed / Not needed

Assessment of level of care

Clinic / Level I / Level II / Level III

Appendix B: Patient Consent Form

Good day, my name is Dr Esther Rockson. I am a doctor training to be a specialist in obstetrics and gynaecology here at Chris Hani Baragwanath Academic Hospital.

I am conducting research in order to obtain a master's degree (MMed). My research is about finding out whether patients who are referred by the clinics and private doctors are appropriately sent to us at the hospital.

This has implications, because if patients are being sent inappropriately, instead of being managed at the clinics, patients end up waiting in long queues and the staff cannot handle the large numbers.

I plan to ask all women to take part in my study as they come to GOPD.

I am inviting you to be a part of my research. All that you have to do is allow me to look at your referral form or note from the clinic or doctor. I will write down information about your diagnosis. I will not do any examinations or tests or experiments on you for my study.

I assure you that your personal information will be highly confidential. Only your file or clinic number will appear on the forms which will be kept by me and my supervisor Professor Buchmann. Your file numbers will not appear on my research.

Taking part in this research does not change how you will be treated. Even if you have signed this form, and decide to change your mind, it will not be a problem.

You can contact me at any time concerning this research

My cell number is 0769005008. If you are willing to take part in this research, kindly sign that you have understood all that has been explained to you. Thank you for your participation

Participant

……

……

Witness

……

……

Researcher……

……..

Date……

Time …….

Appendix C: Ethics approval certificate

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M140484

NAME: (Principal Investigator)	Dr Esther Rockson
DEPARTMENT:	Obstetrics and Gynaecology Chris Hani Baragwanath Academic Hospital
PROJECT TITLE:	Appropriateness of Referrals to Chris Hani Baragwanath Academic Hospital Gynaecological Outpatients Department
DATE CONSIDERED:	25/04/2014
DECISION:	Approved unconditionally
CONDITIONS:	
SUPERVISOR:	Prof Eckart Buchmann

APPROVED BY: Professor PE Cleaton-Jones, Chairperson, HREC (Medical)

DATE OF APPROVAL: 25/04/2014

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House University.

I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned researc and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from th research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

yearly progress report.

Principal Investigator Signature M140484Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES