INVESTIGATING THE QUALITY OF REFERRAL AND SUPPORT SYSTEMS BETWEEN FIXED CLINICS AND DISTRICT HOSPITALS IN AREA 3 OF KWAZULU-NATAL PROVINCIAL DEPARTMENT OF HEALTH.

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PLACE   :   University of KwaZulu-Natal- DURBAN

YEAR   :   2010

Submitted to:

NELSON R. MANDELA SCHOOL OF MEDICINE

UNIVERSITY OF KWAZULU-NATAL DURBAN

SOUTH AFRICA

Submitted in partial fulfilment of the academic requirements for the degree:

Master of Public Health

BY

SUPERVISOR: Prof. SJ. Reid

25 February 2010

ABSTRACT

Introduction

A well-functioning primary health care system depends on all three levels of healthcare, that is, the primary, secondary and tertiary levels of care. District hospitals have a major role to play in the development of a strong referral system. This study was undertaken to evaluate whether the primary health care clinics in Area 3 possess all the key essential components for a strong referral system. Area 3 comprises 3 districts in northern KwaZulu-Natal, i.e. the Umkhanyakude, Uthungulu and Zululand districts.

Aim

The aim of the study was to evaluate referral support systems between fixed clinics and district hospitals in the three districts of Area 3 in KwaZulu-Natal province.

Methods

A descriptive study was undertaken in 58 randomly selected clinics in Area 3. Data was collected between July and August 2007, on availability of: communication technology, transport for patients being referred to the district hospital, and guidelines. Referral letters were reviewed to determine if they contained adequate information. Professional nurses were interviewed to determine the training they had attended.

Results

A third (34%) of clinic nurses on duty had been trained in Primary Health Care; 57% of clinics had at least one professional nurse on duty with a PHC diploma. The proportion of nurses trained in short courses ranged between 4% and 47%. Fifty-six out of fifty-eight (97%) of clinics had telephones; 57% reported problems with telephones. Eighty-eight out of one hundred and seven (88%) of selected referral letters did not have adequate information. Only 32% of urgently referred patients were collected by an ambulance within 1 hour. All 58 clinics had the Essential Drug List (EDL) available; availability of the other guidelines ranged between 29% and 79%.

Discussion

The percentage of clinic nurses with a PHC diploma or trained on short courses indicates that most clinic nurses render health services without or with inadequate knowledge and skills. Poor quality of referral letters and inefficient transportation of referred patients, especially emergencies, confirm a weak referral support system. User perceptions of the referral system have not been explored.

Recommendations

Training and support of clinic nurses needs to be prioritised to improve patient assessment and management, as well as the quality of referral letters. District management should advocate for improvement of patient transportation. Future studies should explore the use of referral letters by and training of, clinic nurses; as well as determine user perceptions.

DECLARATION

I, Phumla Hombakazi Nkosi declare that:

The research reported in this Master of Public Health dissertation is my original research, two colleagues (Dr Horwood and Ms Vermaak) were my co-investigators in the overall referral and support project; their input included providing guidance during protocol development, editing of data collection tools, calculation of sample size, and assisting with data analysis.

(i)   Dr Cosser helped with editing my work; the editing process was only confined to grammar and spelling.

(ii)   This dissertation does not contain other persons' writing that has not been acknowledged as being sourced from other researchers.

This Dissertation has been prepared by Phumla Hombakazi Nkosi, in partial fulfilment of the requirement of the Master of Public Health degree at the School of Family and Public Health Medicine, Nelson R Mandela School of Medicine, University of KwaZulu-Natal, Durban South Africa.
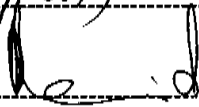
Signed_____

Date-----(---21/12/2009----)---21 December 2009.-------

Supervisor's signature-------------------------------

Date_____21st December 2009_____

ACKNOWLEDGEMENTS

My extended family, friends and colleagues who have encouraged me throughout this long journey.

PUBLICATIONS OR PRESENTATIONS

The findings of this study were disseminated to the district and hospital management. Presentations were done at the District management team/ Service delivery meetings held in each of the 3 districts:

- Zululand district on 14 February 2008
- uThungulu district on 13 March 2008
- Umkhanyakude district on 18 March 2008.

Another presentation was done at the Area 3 Learning Complex project steering committee meeting, held at Empangeni, on 07 March 2008

A report is being compiled to be submitted to the provincial department of health, for distribution to the 3 districts.

ACRONYMS AND ABBREVIATIONS

ARV	**Anti-Retroviral**
CRH	**Centre for Rural Health**
CHC	**Community Health Centre**
DHS	**District Health System**
DMT	**District Management Team**
DOH	**Department of Health**
EDL	**Essential Drugs List**
EMRS	**Emergency Medical Rescue Services**
EPI	**Expanded Programme on Immunisation**
FP	**Family Planning**
FGD	**Focus Group Discussion**
GP	**General Practitioner**
HAST	**HIV/AIDS, STI and TB (Integration)**
HST	**Health Systems Trust**
IMCI	**Integrated Management of Childhood Illnesses**
KZN	**KwaZulu-Natal**
PHC	**Primary Health Care**
PMTCT	**Prevention of Mother-to-Child Transmission**
PPT	**Planned Patient Transport**
SAHR	**South African Health Review**
STI	**Sexually Transmitted Infections**
TB	**Tuberculosis**
WHO	**World Health Organisation**

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CHAPTER I: INTRODUCTION

A well-functioning primary health care system depends on all three major levels of healthcare, these include, the primary, secondary and tertiary levels. It is, therefore, essential that a strong, effective referral system that links up these three levels of care is developed. Any weakness or failure in the referral system impacts negatively, not only on the primary health care system, but also on the health system as a whole (1). District hospitals are a vital constitutive element in the support of primary health care activities at district level and the subsequent development of a strong referral system that links clinics to the local hospital (2). Clinic nurses should be provided with the necessary support, so that they possess the capacity to arrange the urgent referral of patients within one hour. The support includes the following identifiable factors: the availability of communication technology, transport, guidelines, the training of clinic nurses, and significantly, the necessary guidance provided by doctors at the district hospital (2).

This study aims to evaluate whether the primary health care clinics retain all the key essential components required for a strong referral system. These aforementioned components have been identified and evaluated to determine the strength of referral support. Such knowledge gives an indication of whether clinics receive adequate support from district hospitals in order to ensure a quality referral system.

This is part of a larger study specifically focussing on investigating the quality of referral and support systems between primary health care clinics and district hospitals in three (3) districts (Cluster/ Area 3) in KwaZulu-Natal. In the larger study both quantitative and qualitative methods were used to collect data on referral and support system between clinics and district hospitals. Quantitative data was collected, during facility reviews in 58 clinics, on the components of the referral system, stated above. Qualitative data was collected through focus group discussions held with clinic nurses and doctors, as well as through interviews held with clinic supervisors who were responsible for the 58 sampled clinics.

The present dissertation will focus on secondary analysis of the quantitative data collected on the quality of referral support systems between primary health care clinics and district hospitals in this area. It will comprise 6 chapters.

The first chapter describes the study area, and gives an introduction and background to the problem being investigated. The chapter explains the reasoning behind the study: what motivated the study, and what would be achieved by conducting the study. In addition, the aim and objectives, as well as the scope of the study will be included.

Chapter 2 outlines the theoretical framework applied in the study. An illustration is presented on how and where the identified components of the referral system are applied to Donabedian's framework of quality of care. This chapter sheds light on available legislation, department of health policy guidelines, and reports concerning the referral system and its components. Furthermore, it provides insight into findings of studies; that have been undertaken locally and abroad, dealing with the various aspects of the referrals system.

Chapter 3 covers the methodology of the study: describes the study design, target and study population, variables, data collection and analysis, as well as dealing with important relevant ethical considerations. Limitations and possible biases are discussed.

Chapter 4 provides the results of the study; district comparisons, where possible, are presented. Chapter 5 comprises the discussion of results, while Chapter 6 considers the recommendations and conclusions to be deduced from the knowledge acquired from the study.

1.1 Description of Study Area

KwaZulu-Natal contains 11 health districts divided into clusters or areas; Area 3 constitutes one of the clusters. It comprises 3 districts in northern KwaZulu-Natal, i.e. the Umkhanyakude, Uthungulu and Zululand districts. Each cluster is overseen by an Area Manager (Chief Director) who is based at the KwaZulu-Natal provincial office (KwaZulu-Natal provincial Department of Health). Each district has a district management team under the leadership of a district manager. District hospital management has the role of overseeing the primary health care clinics. Most mobile clinic teams are based at district hospitals. Clinic supervisors and primary health care trainers, (where they exist) are also usually based at the district hospital. A few cases exist where, due to a lack of space, PHC supervisors, trainers and mobile teams occupy offices separate from the district hospital. Clinic supervisors, trainers and doctors are expected to visit clinics at regular intervals.

Ambulance or Emergency Medical Rescue Services (EMRS) are predominantly based and controlled centrally at district offices. Figure 1 provides a brief description and illustration of the 3 districts of Area 3.

Figure 1: Map showing the 11 Health Districts and sub-Districts of KwaZulu-Natal (3)

1.1.1 Umkhanyakude District

This district is situated west of the Zululand district, with Mozambique on its northern extremity and Swaziland on the north-western borders. It contains 5 district hospitals, 49 fixed clinics and 12 mobile teams serving a total population of 503 760 (updated in April 2008) (3).
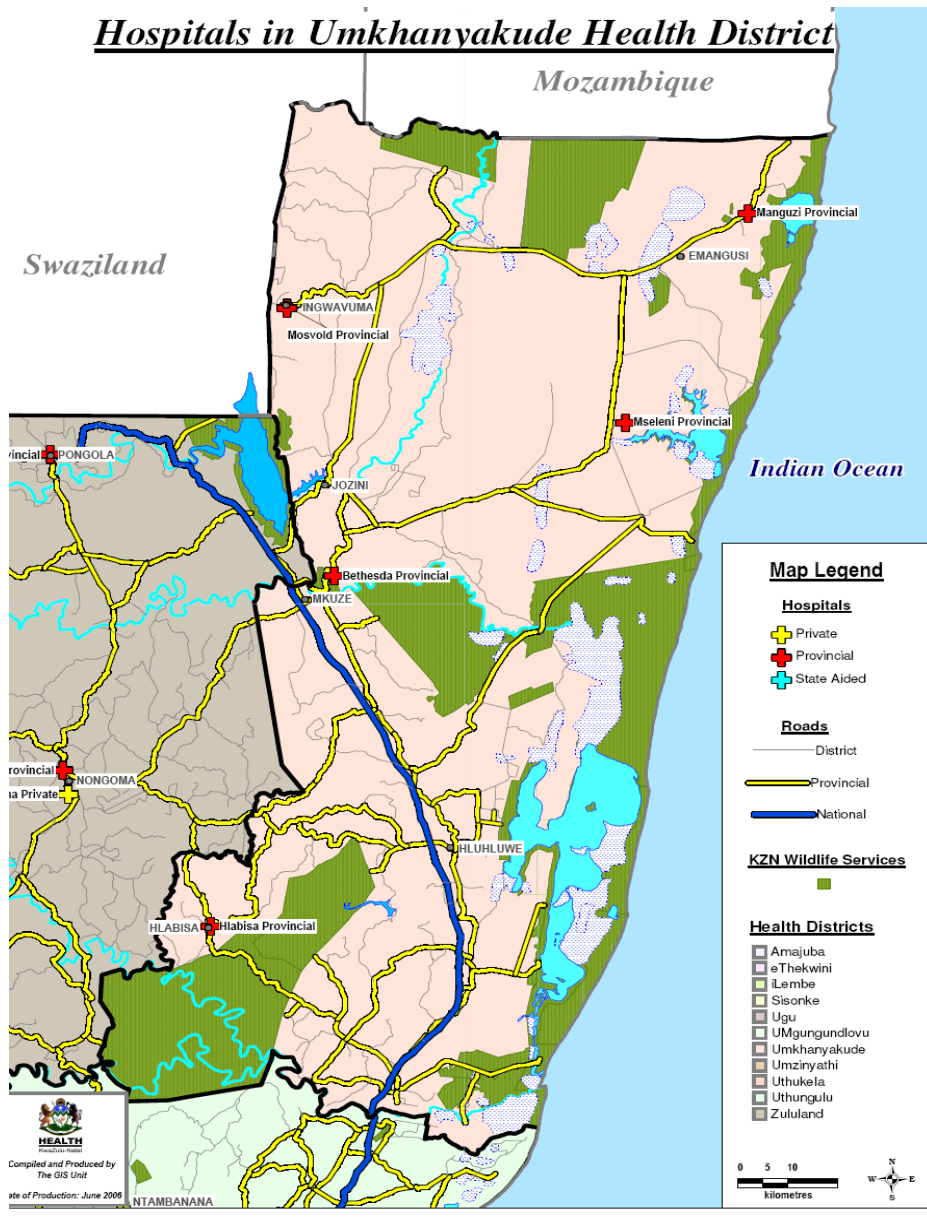
Figure 2: Map showing Umkhanyakude district hospitals: Bethesda, Hlabisa, Manguzi, Mosvold, and Mseleni(3)

1.1.2 Zululand District

This district is bordered by Mpumalanga district in the north-west, Swaziland in the north-east, uMkhanyakude district in the north-west, uThungulu district in the south and Umzinyathi district in the south-west. It has a population of 832 786 and is served by 5 district hospitals, 53 clinics, 1 community health centre (CHC) and 12 mobile teams (3).
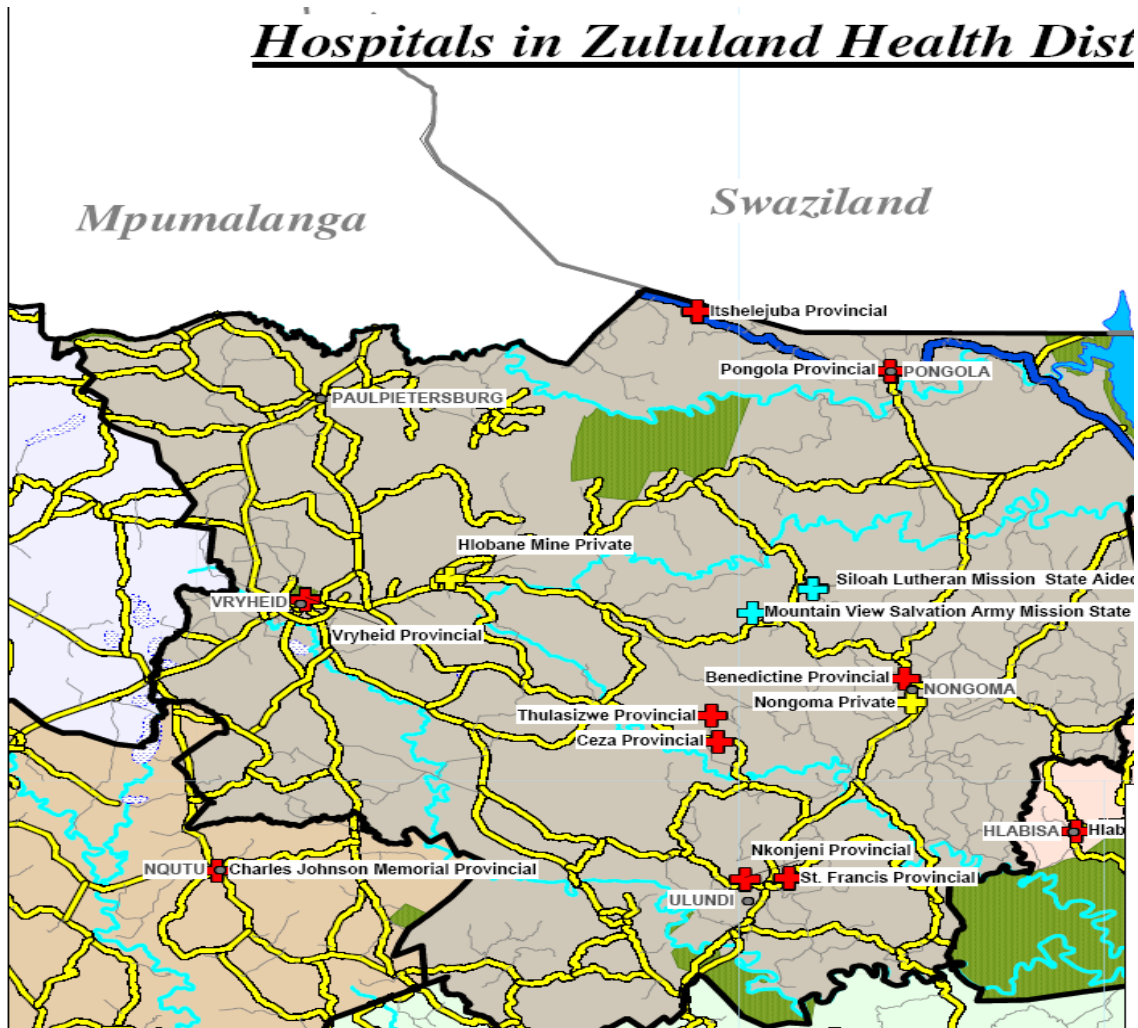
Figure 3: Map showing Zululand district hospitals: Benedictine, Ceza, Itshelejuba, Nkonjeni, and Vryheid(3).

1.1.3 uThungulu District

The district stretches from the east coast, is bordered by Ilembe district in the South, Umzinyathi in the west, Zululand in the north-west and Umkhanyakude in the north-east. It has a population recorded as 898 913, and is served by 6 district hospitals, 1 CHC, 44 clinics and 14 mobile teams. 2 hospitals in uThungulu operate as both district and regional level hospitals (3).
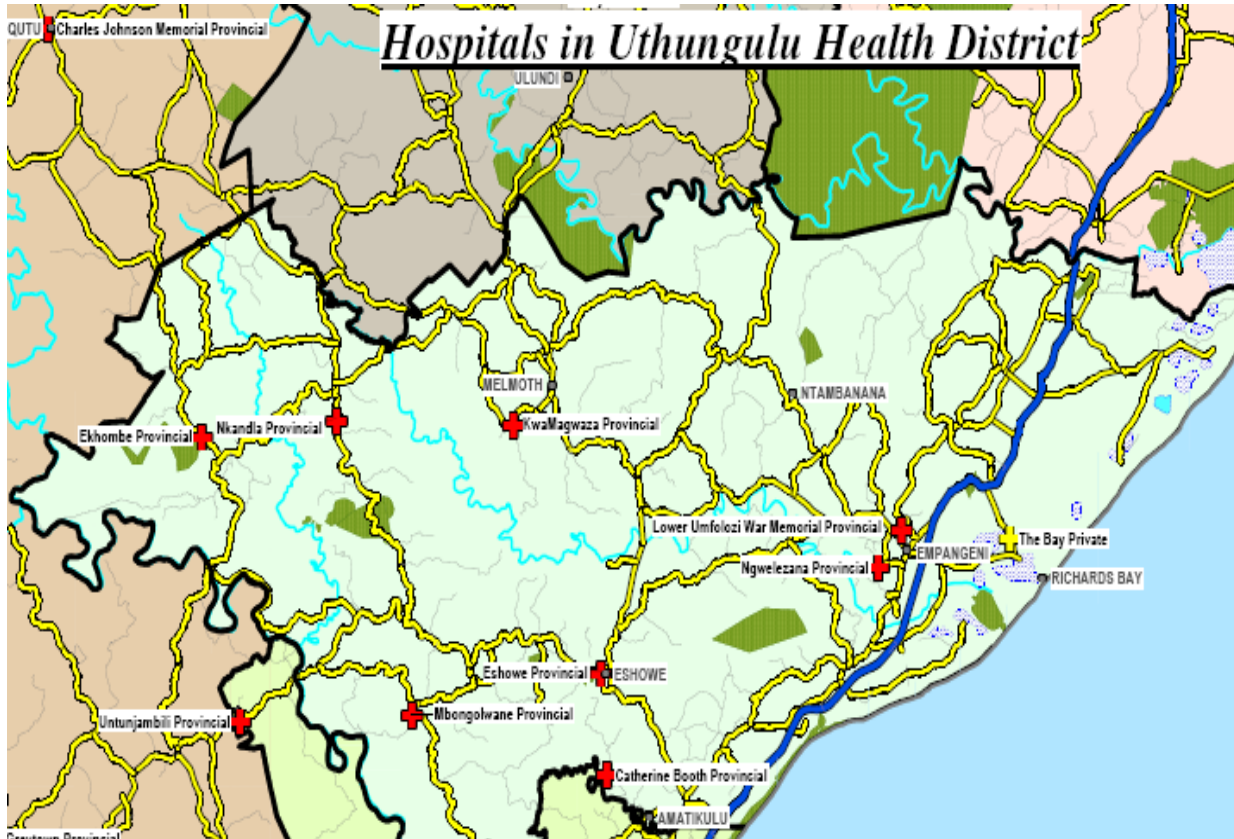
Figure 4:Map showing uThungulu district hospitals: Catherine Booth, Ekhombe, KwaMagwaza, Mbongolwane, Ngwelezane and Nkandla (3)

BACKGROUND

Primary health care serves as the main strategy for developing and promoting the health of communities in South Africa, and aims at the provision of comprehensive and integrated services. The District Health System (DHS) is the vehicle for facilitating implementation of primary health care. Within the DHS a clear referral network of services needs to exist. District hospitals form part of the district health system, and their services constitute an element in provision of comprehensive primary health care, owing to the prevailing reality that district hospitals provide the first level of support and referral for primary health care clinics(4).

A referral system can be viewed as the mechanism whereby clients move between different health providers, health facilities and/or other levels of care. Such a process should allow for the availability of increasingly specialized care at each level. A well functioning referral system enables the necessary transfer and referral of patients between PHC clinics and district hospitals, district and regional/tertiary hospitals, and, furthermore, ensures a continuum of care as clients are empowered to access additional and/or different services. Ensuring continuum of care through an efficient referral system constitutes one of the core competencies of the district hospital (2).

A well-functioning referral system requires a number of elements, including vital logistic factors such as the availability of transport, drugs and equipment, as well as adequately trained health workers, who possess knowledge and skills to identify patients needing referral. Referral guidelines should be available to guide health workers to identify patients needing referral, whom to refer to, to which department, the relevant time, and what procedure to use. Good relations and effective communication between different levels of health care are also important factors in ensuring the quality of care during the referral process; this is vital as patients can suffer if treatments initiated at one level of care are not clearly and transparently communicated to health workers at another such level (5). Two-way communication is also required for health workers to utilize the learning opportunities that are associated with referral. The fulfilment of this requirement depends on communication technology (radio, telephones), referral and feedback letters and an appropriate reporting system (6).

A referral system will only succeed in improving health outcomes if clients present themselves timeously at the health facility. A common failure of referral can be identified in that, if clients present late, treatments are delayed and may, consequently not be effective. The findings of the South African 2002 - 2004 Report on Confidential Enquiry into Maternal Deaths shed light on significant problems existing at various levels of health services in the country. KwaZulu-Natal recorded the highest rate of maternal deaths (154/100 000 live births in 2004) in the country. Although the number does correlate with appropriate demographic representation of the provincial population, vis-à-vis the national figure, complacency must be avoided. Delayed referrals, poor recognition of complications, and delayed health seeking on the part of patients, reflect certain of the particular factors identified as having contributed to maternal deaths (7).

Problems relating to referrals have been identified in the implementation of the Integrated Management of Childhood Illnesses (IMCI). Clinic nurses experience challenges when referring children who have been classified according to IMCI, both from doctors and the ambulance services (8) Referral of sick children is also compromised by the fact that IMCI trained nurses fail to accurately identify seriously ill children (8).

Appropriate health seeking behaviour in the community is yet another important element. Although the referral and support study did not explore health seeking behaviours or the perceptions held by communities regarding referrals, a study undertaken in rural Niger indicated that communities may have particular reasons not to wish to be referred to a hospital. Amongst such reasons may be financial factors or constraints, anxiety, or other relevant social considerations (9). Another study undertaken in Sudan also identified cost as the main reason for about 67% of children referred urgently, not being able to attend the referral hospital on the day of the referral (10).

The referral support study sought to explore the status of the referral support system in Area 3. This followed a situational analysis that was conducted by the Centre for Rural Health (CRH) in 2006, to investigate factors impacting on organisational learning in Area 3. This situational analysis revealed that only 31% clinics (ranging from 18% to 48%) reported receiving feedback when they had referred patients to hospitals. Since this was response to only a few questions

relating to referral and feedback letters, these results were not reported on (11). It was, therefore, considered necessary to conduct a more in-depth study into the referral system so that more understanding is gained, which will lead to the development of interventions should gaps be identified in the referral system.

The study sought to determine the various strengths and weaknesses of the referral system in order to obtain baseline information that can inform those particular health system interventions required to be developed and implemented to improve the referral system in Area 3. Such a situational analysis will, therefore, ensure that interventions aimed at improving both referral and referral support systems in Area 3 are evidence-based.

1.2   STATEMENT OF THE PROBLEM

In recent years there has been an attempt to institute various systems to improve health service delivery, including the referral of patients. KwaZulu-Natal Department of Health, in its Strategic Priorities 2005-2009/10, has stipulated as forming one of its goals, the 'timeous delivery of quality health services'. Quality is assessed by means of access to health services, including those of clinical nature, and how clients perceive such services (12). Delayed referrals are still apportioned blame and responsibility for maternal deaths (7). From anecdotal information (from KwaZulu-Natal clinic nurses participating in an IMCI study) and information obtained from a situational analysis mentioned above, conducted in Area 3 in 2006, an indication exists that there remain several challenges with referrals, ranging from the transportation of patients to the lack of support by referral hospitals (8).

1.2.1   Research Hypothesis

Referral of patients between primary health care clinics and district hospitals in Area 3 is constantly undermined by inefficient communication, problems arising in relation to the transportation of patients, and inadequate support of clinic nurses by the relevant designated 'mother' or district hospitals.

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1.2.2 Research Questions

In investigating the quality of referral in area 3, we developed the following questions:

- What are the strengths and weaknesses of the referral system in Area 3?
- Are clinic nurses trained to assess, manage, make decisions on, and organise referrals?
- Do clinic nurses have clear guidelines as to their scope of practice?
- Is there communication between clinics and district hospitals, and what is the quality thereof?
- What is the quality of referral letters written by clinic nurses?
- Do doctors guide clinic nurses when such nurses refer patients. Do clinic nurses have an opportunity to learn from those referrals either sent to, or received from district hospitals?
- Do health workers receive feedback from their referrals in order to develop learning opportunities?
- What is the status of transport for referred patients? Is transport available for both urgent and non-urgent referrals? What proportion of urgent referrals is collected by the ambulance within the regulation 1 hour? (as per DOH norms and standards) (13).
- Do clear referral guidelines exist to assist nurses in the assessment of which conditions to refer, when and how?
- Do clinics keep records on referred patients?

1.3 THE AIM OF THE RESEARCH

The aim of the study was to evaluate referral support systems between fixed clinics and district hospitals in the three districts of Area 3 in KwaZulu-Natal.

1.4 SPECIFIC OBJECTIVES OF THE RESEARCH

- To describe the training received by nurses working in Area 3 clinics.
- To describe the methods of communication available for use by clinic nurses
- To assess the completeness of written communication between clinic nurses and hospital doctors

- To determine availability of transport for patients referred between clinics and district hospitals
- To review guidelines and records related to referrals.

1.5   ASSUMPTION UNDERLYING THE STUDY

District hospitals have an obligation to support primary health care clinics to ensure a seamless, quality health service delivery. Continuity of patient care can be achieved where strong referral support systems are in existence in respect of the different levels of health care, including communities, clinics, district hospitals, and, in addition, regarding the higher levels of health care. Satisfactory communication, the availability of suitable transport, knowledge and skills on the part of clinic nurses, acquired through both formal and informal training, as well as the availability of clear guidelines are regarded as the key elements of referral support.

1.6   OPERATIONAL DEFINITIONS USED IN THE STUDY

Fixed PHC Clinic

Clinic located in a permanently erected building and rendering services at first contact to clients resident in a catchment area on an outpatient basis. Services providers are usually professional nurses with support received from district hospital doctors.

District hospital

Hospital rendering services to clients referred from clinics on outpatient and inpatient basis. Services are usually rendered by generalist doctors.

Regional hospital

Hospital rendering services to clients referred from the district hospitals in the catchment area. Services are usually rendered by specialist doctors.

Clinic nurse

A professional nurse who provides health services to clients/ patients at the PHC clinic.

Clinic manager

A professional nurse in-charge of the clinic, whose role is to oversee the activities thereof and, furthermore, to supervise the staff working in the clinic.

Clinic supervisor

Position occupied by a professional nurse at sub-district level, based at the district hospital, and responsible for supervising the quality of services rendered at fixed PHC clinics.

Programme co-ordinator

A position occupied by a senior official based at the district and/ or subdistrict office who possesses an overall responsibility for coordinating implementation of programme(s) in hospitals and PHC clinics. A programme co-ordinator enjoys responsibility for either one or a cluster of programmes.

Emergency/ urgent referral

Referral of patient to the next level of care needs to occur within 1 hour due to the severity of the patient's condition. Transport is provided, and has to be organized.

Non-urgent referral

Referral occurs whenever it remains convenient for the patient and/ or the clinic. Patient uses his/ her own transport.

Ambulance response time

Period of time from when the initial contact for the service of an ambulance is received, until the time the vehicle arrives at the facility/ scene.

Referral support systems

Essential components of the referral system such as communication, transport, guidelines, and training (knowledge and skills).

Clinical guidelines

A set of written guides that explain assessment and management of patients.

Communication technology

Refers to the various modes of communication ranging from telephones to certain electronic means involving the use of a computer.

Referral letter

A structured form or letter completed by the referring health worker to provide necessary relevant information (administrative and illness related) concerning the patient being referred.

Feedback letter or back referral

A note or letter written by a health worker who has attended to a referred patient supplying feedback concerning the investigation, diagnosis and management of the patient.

1.7   SCOPE OF THE STUDY

The study was undertaken in three districts of Area 3. It involved the review of a random sample of 58 clinics selected from a total population of 148 clinics, interviews with clinic supervisors, and focus group discussions with doctors, clinic nurses and community health workers from each of the three districts.

The main study was designed to investigate the quality of the referral system as well as the particular support provided by clinic supervisors and doctors visiting primary health care clinics. 22 clinic supervisors, who had responsibility for the 58 clinics were interviewed to explore their role in supporting clinics, 4 focus group discussions were held with medical officers and medical managers, 3 focus groups held with clinic nurses, and 3 focus group discussions with community health workers.

Each of the 3 districts had a focus group of each of the 3 categories (doctors, nurses and community health workers); one district had a second doctors' focus group discussion conducted due to the poor attendance of the first focus group. Qualitative data was obtained on relevant experiences of participants in relation to referrals, including communication, relationships between different levels of health care delivery, transportation of patients, roles and major challenges of doctors visiting clinics, as perceived by both doctors and nurses. The candidate (writer of the dissertation) led this research project, co-ordinated all the activities, and participated fully during all the stages of the research.

This dissertation will only provide secondary analysis of the quantitative data, collected in fixed clinics concerning referral support. Included herein are data relating to the following issues: clinic nurse training, the review of clinic records on ambulance response times, the availability and use of referral and clinical guidelines, the availability and use of communication technology, and a further review of referral and feedback letters.

2   CHAPTER II: LITERATURE REVIEW

2.1   INTRODUCTION

This chapter will discuss a theoretical model and conceptual framework on which the study is based. The literature that has been reviewed, related to those key components identified as referral support systems, will be critically discussed.

2.2   PURPOSE OF THE LITERATURE REVIEW

This literature review will discuss and critically analyse available information on the referral support system and its different components (14). In addition, illustrates that research which has hitherto been undertaken on this topic, and discusses any further research needing to be conducted; this will help to clarify the research question further.

2.3   SCOPE OF LITERATURE REVIEW

Literature relating to the referral system and essential components that have been identified as important to support the referral system will be reviewed. Donabedian's model of the health care system has been chosen to demonstrate the linkages between the structures, processes and outcomes relevant to a functional referral system. A conceptual framework has been developed to illustrate the key components of the referral system. The review includes relevant Department of Health policy guidelines, norms and standards, as well as strategic planning documents. Department of Health annual reports that describe the performance achieved against set targets are also reviewed. The review further includes studies that have been undertaken on the referral system and/or certain of its components, both in South Africa and in other regions of the world. Conclusions are then arrived at on what particular areas need to be explored further and why.

2.3.1 Theoretical Framework

Donabedian's model of the health care system

This model was introduced in 1966 to measure quality of the health system, and is based on 'simple system theory' (15). According to Donabedian, a fully developed system consists of three components: structure, process and outcome. Structure is described as the environment in

which healthcare is given; process refers to the method whereby health care is rendered, outcomes relate to the results of the specific health care that is provided. Structure includes resources, human and physical; process alludes to those activities such as patient related activities and outcomes focus on results of processes, for example, cure rate and patient satisfaction rate (15). The model depicts a causal relationship between structure and process, and between process and outcome; processes are undermined by poor structures, and this subsequently leads to poor outcomes(15)

STRUCTURE

District & hospital management

Infrastructure, human and material resources

Norms and standards

Management protocols /clinical & referral guidelines

Trained/ skilful nurses

Transport

Communication technology

PROCESS

Assessment, diagnosis and management of patients

Organising referral of patients

Communication (clinic nurses, doctors, transport officers, supervisors,

patients & relatives)

Writing of referral letters

Feedback on referred patients

Follow-up on patients

OUTCOMES

Output – early, correct diagnosis, early treatment, timeous referral, correct treatment

condition cured or well controlled, patient satisfaction, high staff morale

Figure 5: Application of Donabedian's Model to Referral System

2.3.2 Conceptual framework

The conceptual framework has been derived from the published literature relating to the referral system. Various concepts have been identified as elements that feature as central to the referral system. A conceptual map is used to illustrate relationships between the different concepts (16, 17).These elements are believed to enjoy a positive linear relationship - strength in these elements leads to a strong referral system; similarly, weakness in any one of these above-mentioned elements results in a poor referral system (17).

2.3.2.1 Key Components of a Good Referral System:

A good, effective referral system depends on the ready availability of clear referral guidelines that are well communicated and understood by staff employed in clinics and district hospitals (2). Clinic nurses need to be trained so that they possess adequate knowledge and skill to both assess and manage patients, including the ability to identify those patients needing referral (urgent and non-urgent) (18). In addition, a capacity to refer patients appropriately according to set guidelines is a necessary prerequisite.

District hospital management is tasked with ensuring that clinics are provided with up-to-date management guidelines. The ready availability of means of communication is essential. Thus telephones and/or two-way radios must be accessible and satisfactorily maintained (13). Such a requirement is of importance in facilitating communication between clinics and the hospital, creating an opportunity for nurses to contact doctors for both clinical guidance, and for the organisation of transport for referrals.

Referral and feedback letters are also a valuable means of communication between clinic nurses and doctors. Good quality referral letters provide clear information concerning the condition of the referred patient, while feedback letters not only supply important feedback about the patient, but also provide continuing education for clinic nurses (19). Transport needs to be available to

allow the timeous conveyance of patients requiring urgent referral. According to the DoH norms, urgently referred patients should receive such a necessary vehicle within 1 hour (2, 13). Records of referrals, including ambulance response times, require maintenance for the regular monitoring of the referral system (13).
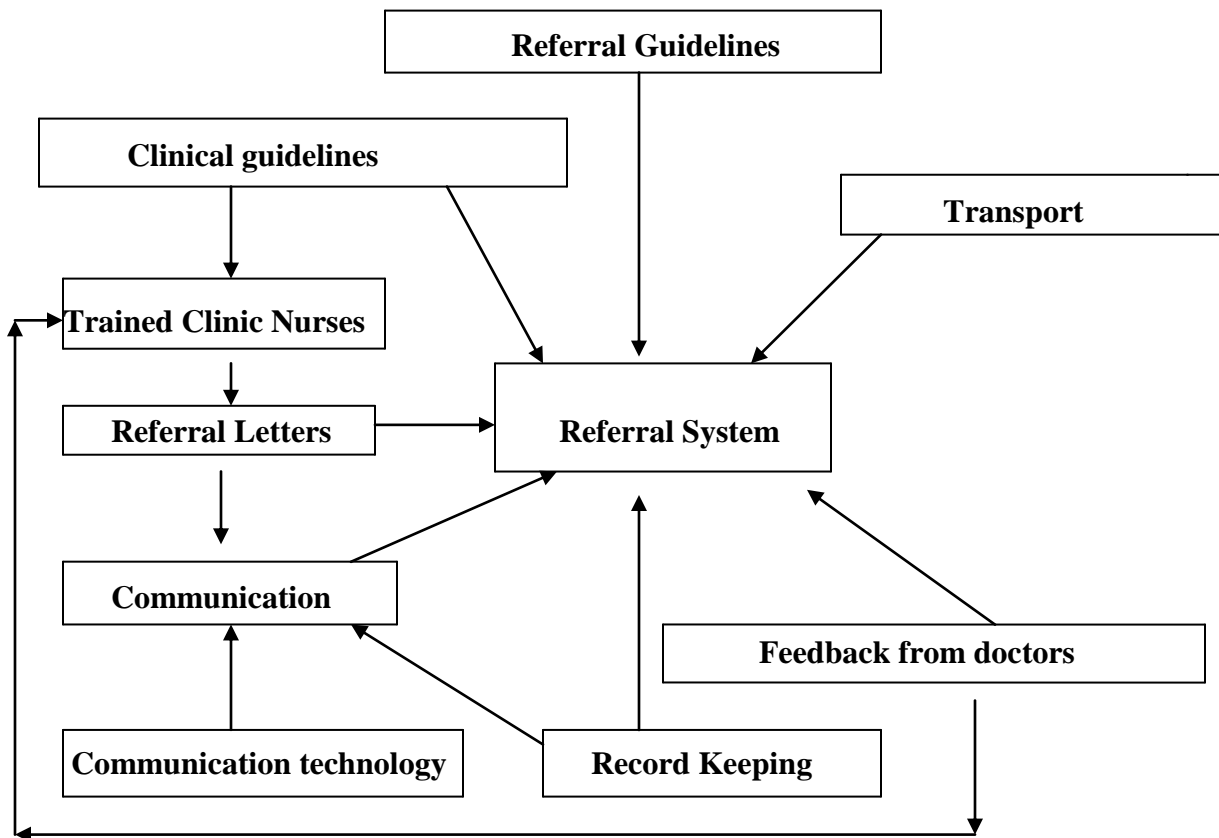
Figure 6 The Conceptual Framework: Components of the referral system between PHC fixed clinics and the district hospital

2.4   *LITERATURE REVIEWED*

Literature review process

The Department of Health websites, national (www.doh.gov.za), and KwaZulu-Natal (www.kznhealth.gov.za) were searched for policies and reports that relate to the referral system. Words, such as 'referral of patients between clinics and district hospital', were entered and searched. Google search engine (www.google.co.za) was used to search literature on the identified components of the referral system, namely, 'transport for referrals'; 'referral letters; 'referral letters by clinic nurses to district hospital doctors'; 'written feedback to referrals'; written feedback from hospital doctors to clinics'; 'use of guidelines'; 'training of clinic nurses'.

Reviewed material

In South Africa, the Department of Health, both nationally and provincially, has developed legislation, guidelines, norms and standards, and set strategic priorities to ensure quality healthcare delivery. The first part of this section highlights such legislation, guidelines, norms and standards relevant to the referral system and its components. This will be followed by reflection on studies and reports on the progress made with regard to the referral system, locally, compared to those of other countries.

2.4.1 Legislation, Policy guidelines, Strategic Priorities, Norms and Standards

The White Paper for Transformation of the Health System (1997), the Primary health care package for South Africa (2000), the district service package for South Africa (2002), all lay down the requirements that are central to quality health service delivery. As outlined in Donabedian's model, such documents address the structural requirements, and processes that are necessary for a functional referral system, such as, transport, timeous response to emergencies, communication, adequately trained, competent health personnel; the role of district hospitals in ensuring an efficient referral system is also outlined. The National health Act further outlines the role of national and provincial departments in ensuring access to health care by all South African citizens. In keeping with the National health Act, and in line with the National Department of Health strategic priorities, the KwaZulu-Natal department of health has developed strategic goals

to strengthen Primary health care, stipulating targets for emergency services, and the role of district hospitals:

2.4.1.1 White Paper for the Transformation of the Health System (1997)

This document highlights the need for a functioning referral system between the three levels of health care, in order to promote equity, accessibility and utilisation of health services. For such referral to occur, it is realised that response to emergencies, particularly in rural and peri-urban areas, needs to be improved by establishing a "24 hour dispatch centre, communication system, vehicle maintenance, and human resource programmes". Recruitments and training of emergency health service staff also needs to be prioritised. The document also impresses upon training of health care workers, especially those working at primary health care clinics, who need to be adequately equipped with the necessary skills (18).

2.4.1.2 The Primary Health Care Package for South Africa – a set of norms and standards (2000)

The PHC service package provides a set of norms and standards to guide the functioning of primary health care clinics. According to the PHC service package, clinics should render comprehensive integrated service, and have at least one staff member who has completed a primary health care course. For clinic staff to remain competent, they should be trained in disease management protocols and standard treatment guidelines. Standard treatment guidelines and the essential drug list (EDL) need to be available. Reliable means of communication is important to enable nurses to arrange transport for emergency referrals within 1 hour. Nurses should maintain appropriate records of referrals, and the institution receiving referrals should discuss referrals with the referring clinic. Such information can assist in creating a learning opportunity for the clinic staff (13).

2.4.1.3   Patients' Rights Charter

Health workers are also reminded that it is within the rights of patients to have access to health care; to be referred for second opinion, and for continuity of care. Such care should be given in a healthy and safe environment' (20). All these will be possible if health staff is adequately trained

and is provided with materials and equipment as outlined in the PHC service package and the White Paper for the transformation of the health system above.

2.4.1.4 The District Hospital Service Package for South Africa: Norms and Standard (2002)

The Role of district hospitals in referral system support

The District Hospital Service Package for South Africa: Norms and Standards (2002) outline the role of District hospitals in the district health system as that of:

- "support and provision of clinical leadership to primary health care facilities
- ensuring clear lines of and criteria for referral, for the referral system to work well"

Clear referral systems ensure that all patients requiring referral are afforded access to and receive appropriate management at all levels of care. District hospital staff have an obligation to ensure that they support such up and down referral systems for continuity of care in respect of patients (2).

The District hospital service package reiterates what is contained in the PHC service package that, the hospital ought to refer patients back to the clinic with clearly written feedback. The district hospital service package was developed before the establishment of the emergency medical rescue services (EMRS), hence the document also states the responsibility of such hospitals in transportation of emergency referrals, and maintenance of appropriate records of referrals (2). It should be noted that after the establishment of emergency medical rescue services (EMRS), district hospitals are no longer responsible for management and control of emergency transport. EMRS has set its own standards and targets (to be discussed below).

2.4.1.4 National Health Act No 61 of 2003

In accordance with the Constitution of South Africa, the state possesses an obligation to ensure that all South Africans enjoy access to health care, and that no one is refused emergency care (section 27(2) and (3) (21). The Health Act outlines the role of the national and provincial health departments in the development of, and ensuring the maintenance of standards essential for

human resource training. Policy guidelines need to be formulated to fulfill the urgent requirement that health services be rendered by appropriately trained staff, and for the effective management and support of staff.

The Act also states that provinces ought, of necessity, provide for the effective referral of patients if one public health establishment does not possess the capacity to manage the patient; it is essential that provinces also coordinate emergency medical services(21).

2.4.1.5 The National Health Plan 2006/07

To ensure availability of transport, the Annual National Health Plan 2006/07, included increase of operational vehicles to a target of 90%, and the increase in the number of hospitals and clinics covered by EMRS. The plan also included development and strengthening of Planned Patient Transport (PPT), i.e. transport for non-urgent referrals to and from hospital (22).

2.4.1.6 KwaZulu-Natal Department of Health Strategic Plan 2005-2009/10

The KwaZulu-Natal Department of Health developed its 2005-2009/10 Strategic Plan in accordance with the applicable National Department of Health Strategic Priorities 2004-2009. The KwaZulu-Natal Department of Health retains *inter alia*, the strategic goals "to strengthen Primary Health Care and provide caring, responsive and quality health services at all levels." To achieve such an aim, the KwaZulu-Natal Department of Health committed itself to strengthen Primary Health Care, Emergency Medical Rescue Services (EMRS) and District hospital services. The KwaZulu-Natal Department of Health has stipulated a target of 100% integration of EMRS services into the district health system. The function of EMRS is to provide transport for both emergency and non-emergency patients. The improvement of access to EMRS services requires that the province set a target for response times for emergency referrals; it was, thus, a target was set that 60% of health facilities, both rural and urban, need to be reached by emergency transport within the recommended time of 15 minutes for urban areas and 40 minutes for rural areas (3)

2.4.2 Are standards and targets being met? – Local and International evidence?

2.4.2.1 Availability of transport

The National PHC facility survey, conducted in 2003, showed that 80% of facilities in KwaZulu-Natal had access to emergency transport for the after-hours period, however, the actual time for the ambulance to transport the emergency cases was found to be longer than expected. The median actual time of arrival at the clinics was ascertained as 162 minutes, instead of the anticipated 63 minutes (including travel time and time for administration) (23); however, district breakdown of the data was not made available.

According to the KwaZulu-Natal Strategic plan 2005 – 2010, KwaZulu-Natal was 81% short of its provincial norm of maintaining a minimum of 1 ambulance per 10 000 population (with an average of 150 ambulances operating in the province) (24) During the financial year 2006/07, targets set for emergency transport were not met in KwaZulu-Natal, only 36% of urban facilities and 30% of rural facilities, instead of 60%, were reached within the recommended time (3). Likewise, the target set for non-emergency transport was not met; during 2006/07 the target set for clinics with access to non-emergency transport was 80%; the actual coverage attained was a mere 40% (3).

2.4.2.2 Communication

The National PHC Facilities survey conducted in 2003 found that in KwaZulu-Natal, 91% of clinics maintained a functioning telephone, whilst 25% had a working fax machine (23). Such figures represented an improvement from a similar survey in 1998, where only 58% of clinics retained a working telephone (25). Despite the high percentage of clinics having access to telephones, the 2003 survey also found that 40% of the clinics reported phone interruptions in the past month (23). 31% of clinics had access to a two-way radio. This means that clinics are not meeting their core standard of reliable means of communication (13).

2.4.2.2.1 *Referral and Feedback letters*

The primary purpose of the referral letter is to communicate all relevant information required for the patient to receive effective care. Each patient being referred needs a clearly written letter with the following information:

- patient's history
- examination and findings
- treatment given and
- reason for referral (19)

The National Department of Health (South Africa) has developed a standardised referral letter which is to be utilised by all public health facilities.

The letter consists of a 4-paged self-carbonated pages, divided into two main sections - the upper part is to be completed by the referring health worker, and the lower part by the health worker who had managed the patient at the receiving/ referral health facility as a form of feedback, also referred to as back referral. Such feedback is important since it furnishes important advice to the nurse concerning the follow-up management of the patient and can, in addition, be used to educate health workers employed at lower level facilities (19) (26). Feedback or back referral letters can be given to the patient to deliver at, or may be sent by fax to, the clinic (19). The referring clinic must keep and file copies of referral letters sent. The clinic supervisor needs to conduct a monthly review of all such referrals for the purpose of determining whether provided reasons for referrals were appropriate, and if the content of the letters is both appropriate and contains relevant information. Clinics are expected to refer about 5 – 10% of total patients consulted to higher level facilities for further management (19).

There appears to be paucity of data with regard to referral and feedback letters within the public health sector in South Africa. No literature was found on any specific study conducted to evaluate the use of referral letters by clinic nurses. The other aspect of the overall referral and support study involved focus group discussions with clinic nurses and doctors, as well as interviews with clinic supervisors. The issue of referral letters was explored with all such groups. It was universally agreed that written feedback to clinics was of a very poor quality. Doctors' busy schedules were often cited as a reason for not writing feedback. Most doctors participating

in the focus groups were unhappy as regards the quality of referral letters received from clinic nurses; they maintained that the letters did not contain adequate information. Some doctors and clinic nurses voiced complaints concerning limited space in the national standard letter, and this was furnished as an argument for writing inadequate information (27).

Another study conducted in South Africa by Smith *et al (*explored the reasons for hospital doctors not answering referral letters from primary health care clinics. In this study, as in the referral and support study mentioned above, doctors cited, among others, being overworked and the poor quality of letters received from clinics, and inappropriate referrals as reasons for not responding (28).

Couper *et al* (1996) conducted a study among general practitioners in rural KwaZulu-Natal which explored the quality of referral letters; the effect of pro forma (structured) letters, and the question of whether the quality information in written form was related to response rates. It was found that the introduction of pro forma letters to general practitioners in rural KwaZulu-Natal led to an improvement of the quality of referral letters; however, no change in the quality of replies was discernible (replies were not utilised as a potential opportunity for continuing education), nor did the response rate demonstrate any variation (29).

Smith *et al* contends that studies have shown different findings about whether quality referral letters increase response rates. Lachman *et al (1991)*, in another South African study assessing referral letters sent mostly by general practitioners to Red Cross War Memorial Children's hospital, found that referral letters of good quality increased response rates (30). Smith *et al* found to the contrary, but concluded that better referral letters resulted in better quality of replies (28).

Other studies on the use of referral letters in various settings have reached the conclusion that the use of, and the content of referral letters was sub-optimal. For example, a study conducted in Pakistan (published in 2001), assessing the effectiveness of patient referral showed that only 15% of patients were referred with a prescribed referral letter; 55% of the total were referred verbally, while 30% only received an informal note(26). Referral forms were available in only

about 30% of the facilities; only 44% of facilities kept a record of referrals, and no feedback was ever returned to lower level facilities by the referral facilities (26).

In a study conducted in Nigeria, published in 2008, a pro forma letter was used by investigators to evaluate the contents of referral letters. Information on letters received from general practitioners was found to be inadequate. A figure in excess of 50% of letters did not contain the patients' age, history, findings, and treatment given. No structured letter was used by health workers when referring(31).

Harris *et al (2002)* also evaluated the impact of structured referral letters on communication between general practitioners and relevant emergency department in Sydney, Australia. Most GPs, including those using structured letters (intervention group) and those in the control group, reported receiving a letter from the emergency department via the patient, rather than via fax, as recommended; telephonic feedback was also reported by a small proportion of GPs (1:5).(32). In South Africa, the common practice is that of feedback letters being given to patients; according to hospital doctors, participating in the study by Smith *et al* in South Africa, this was one of the reasons they (doctors) did not see any value in replying to referral letters as patients did not take the letters to clinics.

2.4.3   Management Protocols/ Clinical Guidelines

Standard management protocols must include particular referral protocols that specify when (indication for referral) and where patients should be referred. All districts of KwaZulu-Natal are expected to hold quarterly clinical forum meetings to discuss referral guidelines/protocols. According to the KwaZulu-Natal Department of Health annual report 2006/07, only 50% of KZN districts actually held such meetings (3).

During the 2003 National PHC Facilities survey, 100 % of the KZN facilities were found to be in possession of the Primary Health Care Standard Treatment Guidelines and Essential Drugs list (EDL/Green book); however, protocols related to the management and feeding of HIV children were only found in less than half of the facilities. Nevirapine/Prevention of Mother To Child

Transmission of HIV (PMTCT) protocols were available in only 24% of facilities (23). Despite availability of protocols on Syndromic Management of Sexually Transmitted Infections (STIs) in 98% of the facilities, STIs were correctly treated in only 70% thereof (23). Such a figure potentially indicates that certain health workers neither use nor comply with particular protocols.

A study conducted in Zimbabwe to determine the effectiveness of the referral system for antenatal and intra-partum problems in Gutu district, discovered that nurse-midwives were failing to comply with referral indications. However, it was noted that nurse-midwives were good at referring some problems, a fact which drew conclusion from the authors that non-compliance was not due to any inherent lack of skills in detecting abnormalities (33). Some doctors participating in focus group discussions held as part of the overall referral and support study, reported that clinic nurses were referring patients inappropriately; they believed that the reason thereof was due to clinic nurses not utilising the Essential Drugs List (EDL)(27).

Grimshaw and Russell (1993) conducted a systematic review of studies undertaken to examine the effect of guidelines. Most of the 59 studies (55) found that the process of care was in line with the guidelines. Russel and Grimshaw (1992) also suggested certain conditions that contribute to the effective use of clinical guidelines, such as, involvement of clinicians in guideline development; specific educational intervention for disseminating the guideline; as well as patient reminders during consultation (34). A Cochrane systematic review of studies was conducted to determine if clinical guidelines were effective in changing nurses' behaviour of health workers, including nurses and midwives. Three of these studies evaluated different dissemination strategies, and found that teaching sessions are better in dissemination of guidelines (35). The referral and support study enquired about training of professional nurses in various clinical guidelines, including the EDL, however the use of guidelines was not evaluated.

2.4.4 Training

Primary Health Care will be strengthened by such measures as, ensuring that facilities retain adequate numbers of staff who are equipped with the necessary skills and competencies (12). To

keep up with new developments, that seem to occur at a high rate, regarding management of disease, health professionals have to undergo regular training and updates (36).

The national primary health facility survey, conducted in 2003, found that in KwaZulu-Natal, the highest percentage of professional nurses who were recorded as having attended updates in the previous 12 months was 24% (trained in HIV counseling and TB management), followed by that for HIV prevention and management related training, i.e. Prevention and treatment of HIV related diseases (20%), and PMTCT (18%).

According to the national and provincial IMCI training target, 60% of primary health care nurses should be trained in IMCI. An IMCI facility review, conducted in KwaZulu-Natal, in 2005 (unpublished), ascertained a figure of 34% of clinics operating in the province, retained a minimum of 60% of professional nurses having been trained in IMCI; in area 3, an average of 33% of clinics recorded 60% of professional nurses IMCI trained. The same review discovered that in area 3, the proportion of clinics that had at least one professional nurse IMCI trained had doubled (71%), compared to the 35% reported in the same area in 2002/03.

Another study highlighting the prevailing dire situation with regard to training of clinic nurses was conducted in 2003 by the Population Council in KwaZulu-Natal. This study reported a mere 46% of professional nurses providing family planning services in the 3 months prior to the study, had not received in-service training in the topic; 34% of those providing STI services, during the same period, had never received training in STI counseling, diagnosis and treatment; a further 34% nurses managing HIV/AIDS related diseases had also not received training (37). It was also reported that 68% of nurses had not received PMTCT training. Despite the fact that, according to the 2003 national PHC facility survey, PMTCT formed one of the topics frequently attended, the Population Council study indicated an urgent need existed for PMTCT training among professional nurses. It is not clear how the 2 studies had different findings; the only explanation could be that the Population council study was conducted before PMTCT training for professional nurses was scaled up.

In 1998, 68% of clinics in KwaZulu-Natal had at least one nurse trained in primary health care diploma, and the mean per clinic was 2.6 (25). Such a figure was higher than the national norm of 1 PHC trained nurse per facility. In 2004, it was noted in the National Strategic Priorities 2004

– 2009, that approximately 40% of facilities, nationwide have primary health care trained nurses (38). Such a figure has important implications for the quality of health care, including that of referrals. The poor assessment of patients, due to dearth of skills, can result in the inappropriate referral of patients, or patients requiring urgent referral suffering a delay. Such delayed referrals by clinics, subsequently resulting in maternal deaths, were suspected to be attributable to the failure of nurses to recognize complications (7).

2.4.5 Research on the role of district hospitals

Research on the management of district hospitals was conducted in 2000, in two rural districts, located in two separate provinces of South Africa, viz. North West and KwaZulu-Natal. Such study and the result thereof were published by Couper ID and Hugo JFM in 2005. Their findings involved the factor that 'well-functioning' district hospitals were perceived, by key informants as being 'well-integrated into the district'. Key informants, who comprised hospital management teams, district managers and previous medical superintendents, designated such hospitals as 'district friendly' institutions, characterized by clear referral patterns, regular clinic visits and the essential support on the part of health personnel, the availability of the necessary drugs or training (39). Anecdotal evidence exists that if nurses have an experience of doctors not being supportive when they refer patients to hospital Some clinic nurses did not refer children with a severe classification; they argued that they preferred to observe the children in the clinic because the hospital often failed to admit such children (8).

A study in rural Niger conducted to explore various constraints to referral from health centres to district hospitals, also showed nurses' reluctance to refer(40). It was asserted by such nurses that no differences in clinical competence existed between hospital staff and themselves. Referral was considered unavoidable only in cases where surgery was necessary or when no drugs that might avert referral were available (40).

2.4.6 Conclusion

The available literature affirms that various measures are being undertaken by the health department. They relate to the development of policies, guidelines, norms and standards in order to improve quality of healthcare. Most thereof directly impact on the referral system. Annual

reports, based on reports submitted by the different departments, show progress in some areas; also indicate that progress remains very slow in certain other areas. An example hereof is the number of ambulances available. Although clinics are supposed to maintain records of ambulance response times, such information is not, however, reflected in the KZN provincial annual report – the available information has been provided by EMRS. Perhaps it might constitute a valuable exercise to ascertain the actual extent to which clinics maintain and use such records relating to the monitoring of ambulance response rates.

At present, PHC facility, surveys conducted by Health Systems Trust, aid in the provision of objective, scientific information concerning the status of the health system. Such a survey assesses professional nurse training, the availability and use of guidelines, the various accessible means of communication, and the provision made for transportation of emergencies. However, other aspects relating to the referral system, including referral and feedback letters, have yet to be investigated. The Population Council study revealed poor training of professional nurses; it remains a reality that professional nurses provide services in fields of expertise for which they are not trained, a factor constituting a serious disservice to patients who expect to receive quality services, as is promised both in the Batho Pele principles and the patients' rights charter. The training of primary health care staff, particularly in respect of professional nurses, therefore, needs to be constantly highlighted and focused upon.

There remains only a paucity of data regarding the quality of referral letters written by nurses. Several studies have been conducted on doctors, particularly on general practitioners. There is no documented information on the use of the standardised referral letter introduced by the Department of Health. PHC supervisors are required to assess the quality of such referral letters written by nurses. However, no available documented information on this can be acquired. The literature has demonstrated that structured referral letters have contributed to improvement in the quality of information given by GPs when referring patients. Various concerns have regularly been expressed by nurses about the absence of feedback. The finding of low feedback rates reported by clinic nurses in the Centre for Rural Health (2006) study has not been published, as the sample was small (11). Two studies (Couper *et al* and Harris *et al*, 2002) obtained different results on the impact of structured letters in respect of reply rates and quality. Smith

The referral support study devoted particular attention to most aspects forming the backbone of the referral system, including referral and feedback letters.

This study, therefore, was conducted to provide additional information concerning the referral system, in Area 3. The study also had a quality improvement component since findings were to form a baseline for interventions to be developed, implemented and monitored.

3   CHAPTER III: METHODS

3.1   INTRODUCTION

The following chapter describes the research method used in this study. It depicts the study design, target population, inclusion and exclusion criteria, methods employed in determining and selecting the sample and, furthermore, the methods and instruments used to collect data. The chapter also describes measures undertaken to ensure the validity and reliability of data. Another aspect concerns those ethical considerations that were accounted for. In addition, possible biases and measures taken to minimise such a detrimental phenomenon were factored in, as well as the methods used to analyse the data.

3.2   TYPE OF RESEARCH

The following is a health systems research study. Health systems research is aimed at providing information to decision makers, the knowledge whereof will help in the improvement of the operation of the health system and health care (41).

3.3   STUDY DESIGN

The research presented constitutes a secondary data analysis of an observational, cross-sectional, descriptive study. Descriptive studies are used to quantify the problem or to provide a comprehensive description of the current status quo (41). Data obtained will provide the baseline information for a long-term operational research project involving an intervention. The baseline information will subsequently be utilised for comparison purposes upon evaluation of the intervention. Both quantitative and qualitative data was collected during the study. However, for the purpose of this dissertation, the focus will be on secondary analysis of only the quantitative data collected to evaluate the referral support systems.

3.4   TARGET POPULATION

The target population was fixed PHC clinics and district hospitals in Area 3; referral letters from the fixed clinics and feedback letters from the district hospitals.

3.5 STUDY POPULATION

The study population was all the fixed primary health care clinics and referral hospitals in area 3.

3.5.1   Inclusion Criteria:

Such criteria refers to those characteristics applied by researchers in the decision as to who should form part of the study population (17). Such a factor forms one of the ways of ensuring validity and representativeness of the results of the study since precautions are taken to attain certainty in relation to the study population possessing the same characteristics (16).

All public fixed clinics in the three districts of Area 3 were included in the study. These embraced both provincial and municipal clinics. At the time of this study, it was estimated that more than 90% of fixed clinics in Area 3 still referred directly to district hospitals, as there were only 2 community health centres that were still being established. All fixed clinics are expected to have access to all elements considered essential for referral support and it is logistically more feasible to conduct a facility review in a fixed clinic setting.

3.5.2.   Exclusion Criteria:

Mobile clinics were excluded for logistical reasons. Gateway clinics were also excluded owing to their location within hospital grounds and the fact that they enjoy easy access to the referral centre. The two community health centres in Area 3 were also excluded, as these facilities have greater available resources than primary health care clinics, and, therefore, function in a different way. Referrals in community health centres occur within the facility, between clinic nurses and doctors. This study was more concerned with referrals occurring between clinic nurses and doctors at a higher level, that is, the district hospital.

3.5.3   Selection of study population

A list of fixed clinics in the three districts operational in Area 3 was obtained from district offices; the sampling frame involved all 148 fixed clinics in Area 3. Such a precaution was taken to ensure that all clinics had an equal opportunity of being selected for the sample(17).

3.5.3.1 Method of selecting sample

A simple random sampling of fixed clinics in Area 3 was undertaken. Clinics were granted numbers ranging from 1 to 148. The Random Sequence Generator programme (http://www.random.org/sequence/) was used to generate a randomized sequence of integers. Random or probability sampling gives each member of the study population a non-zero probability of being selected; thus the sample is likely to be more representative. Such a process increases the validity of results and helps minimise bias (17).

During conceptualisation of the study a decision was taken not to stratify according to districts and district hospitals was unnecessary, a conclusion based on the assumption that no major differences between the district hospitals existed in terms of the support such hospitals ought to be providing to their clinics. This argument was presented to the statistician, who found it acceptable; the sample was assumed to be representative of all fixed clinics in Area 3.

3.5.3.2   Size of sample.

The size of the sample plays a major role when conclusions concerning the conclusiveness of the study findings are being arrived at. Hence, it is essential that careful thought should be applied when calculating the sample size. Large samples are more representative of the population, and results thereof are more inclined to be of a conclusive nature (42).

To calculate the size of the sample, data was used from two previous studies to estimate the four primary indicators. Referral indicators were based on the findings of a situational analysis, conducted by the Centre for Rural Health, in the same area (Area 3) in 2006 (11).

Support indicators were based on the findings of the 1997 Primary Health Care Facility Survey1997 which found that 55% of clinics had been visited by a doctor in the previous month, while 78% of clinics had been visited by a supervisor in the same period (43).

Assuming a standard error of 10%, and a 95% confidence interval, the following sample sizes were calculated for the four primary indicators:

Table 1: Indicators utilised to determine the size of the sample of fixed clinics selected to participate in the Area 3 referral support study

	Value	Sample Size
Referral indicators		
PHC clinics always send referral patients with a letter	80.3%	43
PHC clinics always receive a reply to a referral letter	29.2%	52
Support indicators		
PHC clinic visited in the last month by a supervisor / manager	78.0%	46
PHC clinic visited in the last month by a doctor	55.0%	58

Therefore, 58 PHC clinics were randomly selected from the 148 fixed PHC clinics referring to district hospitals in Area 3. The sample size was calculated based on the two indicators in order to accommodate the second aspect of this study, i.e. the evaluation of support provided to clinics through supervisory and doctors' visits.

Ten (10) referral and ten (10) feedback letters, where such documents remained available, were selected for review from copies retained at each of the 58 clinics in the past 3 months. If there were only 10 or less copies, all the available letters were reviewed. If there were between 10 and 20 copies, every second letter was reviewed. If there were more than 20 copies, 4 copies were taken from the top, 3 from the middle and 3 from the bottom of the pile/pack.

3.6 DATA SOURCES

3.6.1 Data Collection Methods

- Facility review
- Interview with all professional nurses
- Review of clinic data

- Record review

3.6.2 Measurement Instruments (See Appendix 2)

- Facility review questionnaire (Form 1)
- Professional nurse training information form (Form 2)
- Clinic data questionnaire (Form 3)
- Referral and Feedback letter checklists (Form 4 and 5)

Data instruments were developed prior to the start of data collection, were piloted in two facilities, and adapted as required. The development of the instruments was guided by the literature reviewed, and precautions were taken to ensure that most of the questions related to the referral system components were included. District management teams of the 3 districts in Area 3 delegated members to participate in the review of the data collection instruments, and to provide input.

3.6.2.1 Facility review questionnaire (Form 1)

Such a questionnaire comprised 3 main sections: section A for completion of administrative details; section B (form 2) was separated from this main questionnaire; will be discussed below) section C for completion of data related to referral and feedback letters, transport and communication; and section D concerning the review of available guidelines and records. The first phase of questionnaire development included a series of discussions undertaken with district management who were requested to review the draft questionnaire, and to provide input into the development thereof. Further piloting of the questionnaire during training of data collectors led to its refinement and finalisation.

3.6.2.2 Professional nurse training form (Form 2)

The form was completed by the data collector and contains an appropriate list of diplomas and short courses. It further contains a question on the number of years of experience of the professional nurse. For those courses attended, further questions on the duration of the course, and the specific year during which the course was completed, had to be asked and ascertained.

3.6.2.3 Clinic data questionnaire (Form 3)

The form was used for recording clinic data for the last 3 months. Data was collected on the head count, total number of patients referred, those referred urgently, number of times an ambulance was called, the number collected by the ambulance within 1 hour, as well as the number of referral and feedback letters.

3.6.2.4 Referral and Feedback letter checklists (Form 4 and 5)

The checklists were designed according to the standard referral letter. The referral letter checklist comprised of 4 main sections in order to assess patient information, clinic information, reasons for referral, and patient's current management. The feedback letter checklist was divided into 6 sections for assessing details of referral to the institution, details of the referring practitioner, information on investigations undertaken, diagnosis, date of next review, and details of further management.

A clinic code list, numbering clinics in sequence from 1 to 58 was developed. The 3 districts were coded as follows: U for Umkhanyakude, T for Uthungulu, and Z for Zululand. The district hospitals to which clinics referred were coded: U1 to U5 for Umkhanyakude hospitals, T1 to T7 for uThungulu hospitals, and Z1 to Z5 for Zululand hospitals.

3.7 DATA COLLECTION:

Two teams of data collectors visited the clinics from the beginning of July to the end of August 2007. Each team comprised of a designated team leader and a research assistant. Both of the team leaders were professional nurses. Research assistants, who worked under the supervision of the team leader, had experienced previous HIV counselling training, experience collecting data, and were familiar with the health system. Before starting data collection, teams were trained in

the use of the data collection tools, with a particular emphasis on how to conduct structured interviews. Such training was to ensure that data collectors follow a structured format, avoiding interpreting the questions in their own way, as such a development would interfere with the reliability of the data(41).

Clinic visits were scheduled by the principal investigator (the candidate) two weeks in advance, arrangements were made via district hospitals and clinic supervisors. Detailed standard operating procedures, developed by the candidate, were provided to guide the data collection teams in their activities. The principal investigator (candidate) monitored data collection, and conducted data quality checks.

During every clinic visit, the clinic manager (clinic-based supervisor) was interviewed; in cases where the clinic manager was not available, the most senior professional nurse available was interviewed. During the interview of the clinic manager, information was collected concerning those facilities pertaining to the clinic, such as, availability and use of communication technology. The facility review checklist (Form 1) was completed by the team leader: A review of available guidelines was also conducted during this process.

The research assistant interviewed all professional nurses on duty on the day of the visit to determine which training courses they had attended. A training information form (Form 2) was completed for each professional nurse. The research assistant also reviewed routine monthly clinic data for the previous three months, i.e. March, April and May 2007; records or registers of referrals were reviewed to check the period of time taken by an ambulance to collect urgent referrals. Such information was recorded on the clinic data questionnaire (form 3).

To facilitate the review of referral and feedback letters, the research assistant counted all copies of referral letters and feedback letters, where available. The research assistant selected letters according to the method outlined in the Standard Operating Procedure, as follows: If there were only 10 or less copies, all the available letters were reviewed. If there were between 10 and 20 copies, every second letter was reviewed. If there were more than 20 copies, 4 copies were taken from the top, 3 from the middle and 3 from the bottom of the pile/ pack.

Referral letters were reviewed to determine whether they contained all the essential administrative information, as well as; reasons for referral (history, findings on examination, differential diagnosis), and details of management provided at the clinic. Form 3 (Referral letter checklist) was used to record information about the quality of letters. On the first part of the checklist, data collectors indicated whether essential information was present in or absent from the letter (by ticking either yes or no, as appropriate). For the second part of the checklist, data collectors either transcribed the information on reasons for referral and management of the patient, or, if a photocopier was available, the letter was photocopied. Precautions were taken to obscure patients' details while photocopying in order to preclude a possible breach of a patient's confidentiality. A similar procedure was followed for the feedback letters, and form 4 (feedback letter checklist) was utilised to record the information.

3.8 VARIABLES

- Number of clinics visited in each district
- Number of clinic nurses interviewed
- Number of clinic nurses with PHC Diploma
- Number of clinic nurses with additional training/ short courses (no. per course)
- Number of patients seen in the past 3 months in each clinic
- Total number of referrals in the past 3 months
- Number of times ambulance called for urgent referrals
- Number of urgent referrals collected by ambulance within 1 hour in each clinic
- Number of clinics with transport for non-urgent patients
- Number of clinics using standardized referral letters
- Number of referral letters from clinics completed with all required information (as in checklist)
- Total number of referral letters available in each clinic
- Number of patients referred back with written feedback
- Number of times the telephone was not working in the past 6 months
- Availability of other forms of communication

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- Availability of referral guidelines

- Number of clinical management protocols available

- Availability of referral/ ambulance registers.

3.9 RELIABILITY AND VALIDITY OF DATA SOURCES

Reliability refers to the ability of the measurement instrument to yield the same results when measurement is repeated; validity refers to the degree to which the particular measurement instrument actually provides accurate information in respect of that which is desired (41, 42).

3.9.1. Measures to ensure validity

Data reliability and validity was ensured by use of standardized and piloted instruments. Data collectors were trained in the use of data collection tools; careful attention was devoted to the skills necessary in conducting structured interviews. Each data collector was provided with a copy of Standard Operating Procedures to supply guidance and to ensure uniformity. During the first two weeks of data collection, two senior researchers, including the principal investigator, accompanied the data collectors to observe the actual process and to ensure consistency. Potential problems were identified and addressed and data collectors were afforded additional guidance where necessary.

Data quality checks were also conducted by the principal investigator as soon as questionnaires were received; queries, such as missing data, were raised with the relevant data collectors as soon as possible.

All quantitative data was double-entered into an epi-info database. Following the completion of data entry, the data was cleaned by checking the two entries for consistency. In addition, source documents were used to confirm the correct entry wherever an inconsistency was detected. Range checks were used to ensure that all entries fell within the appropriate range of values for that particular variable.

3.9.2   External Validity

Clinics were randomly selected and the sample size was calculated to ensure representativeness in order to enable a generalisation of the results to the other relevant fixed clinics in Area 3. However, the results can only be regarded as valid for Area 3, and cannot be generalised to other areas of KwaZulu-Natal.

3.9.3 Pilot study

A pilot study was undertaken to test data collection tools and to identify possible logistical problems that might occur during such process. Piloting was done in health facilities that were not intended to be included in the study. Data collectors practised using the tools while facilitators, as senior researchers, observed. After each clinic visit, a debriefing session was conducted; data collectors were actively involved in the review and finalisation of the tools (41). Standard Operating Procedures were also revised where necessary.

3.10 BIAS AND LIMITATIONS

3.10.1 Reduction of bias

3.10.1.1   Selection bias

Selection bias was reduced by randomly selecting the clinics for facility review. The procedure for selection of referral and feedback letters was explained in the Standard Operating Procedures provided to data collectors. On arrival at the clinic, it was explained to the clinic manager that all professional nurses on duty were to be interviewed regarding their training to allow all professional nurses present on the day to participate. Some professional nurses might have been unwilling participants; this may have led to them giving false information

3.10.1.2   Information bias

Data collectors were trained in the use of data collection tools, and experienced an opportunity to pilot the specific tools under observation. Such training was necessary to satisfy the investigator

that data collectors avoided asking questions in a biased or unscientific manner. Any practices that promoted such bias were identified and discussed with the data collectors. Senior researchers, including the principal investigator (candidate) also closely observed the data collectors during the first two weeks of data collection. A likely occurrence is that of participants not remembering well the courses they have attended, and when they had attended the courses.

3.10.2 Limitations

Some limitations were anticipated prior to data collection, and, where possible, measures were taken to minimise their impact. It was anticipated that staff shortages, or other commitments might possibly lead to interviewees being unwilling to allow the required time for an interview. A possibility also existed of interviewing a particular staff member who might not be well informed if the clinic manager was absent. In order to avoid the latter arising, clinics were telephoned to confirm the presence and availability of the clinic manager, and visits were rescheduled to suit such a requirement. Another limitation anticipated involved the possible lack or paucity of letters readily available for review if some facilities had neglected to keep copies of referral letters or did not receive the necessary feedback letters. The limitation of not involving patients to measure patient satisfaction was also acknowledged. The fact that the researcher appears to have had preconceived ideas about the referral system, as expressed in the hypothesis may have influenced the research. The supervisor interviewed the researcher and such possibilities were discussed. The use of other data collectors, other than the researcher herself, may have helped in reducing possible bias.

3.11 STATISTICAL ANALYSIS

SPSS version 13 (SPSS Inc., Chicago, Illinois, USA) was used for the analysis of quantitative data. Quantitative data was analysed in a descriptive manner with frequency tables and bar charts summarizing categorical variables, being utilised. In addition, other statistical factors such as means, medians, standard deviations and ranges were employed to summarise numerical variables. Associations between variables and statistical significance were tested through Chi-square tests; an alpha level of 0.05 was selected.

In order to analyse the quality of clinical information recorded on referral letters, reasons for referrals were put into main categories, and for each category, some information was regarded as essential (see table below) and variables were created to determine availability of this essential information:

Table 2: Reasons for referral and essential information required in the referral letter

Reason for referral	Essential information that should be recorded in the referral letter
Open injury	Administration of tetanus toxoid
Head injury	State of consciousness
Chest problem/ cough	• Duration of cough • Presence/ absence of dyspnoea
Diarrhoea and / vomiting	• Hydration status • Administration of fluids (management)
PV bleeding	• Last normal menstrual period • Result of pregnancy test

The number of referral letters for the other categories of conditions remained few; therefore, a decision was taken not to assess these.

A medical doctor assisted in the development of value labels and assessment of the letters. In order to validate findings, a proportion of randomly selected referral letters were reviewed independently by a second reviewer, also a qualified medical doctor. Sixty five letters (18%) were reassessed to confirm the initial findings. No further analysis of the results was done.

3.12 ETHICS

All the ethical principles of research, namely respect for persons, beneficence, and justice were taken into consideration (16).

The research proposal was submitted to, and approval to undertake the study was obtained from, the KwaZulu-Natal provincial Department of Health research committee and the Area 3 Manager

(see Letter of approval in Appendix 1). Buy-in meetings were held with the District Management team, including the management of hospitals within the 3 districts of Area 3. Hospital managers signed permission letters, which, together with the letter from the provincial research committee, were submitted to the University of KwaZulu-Natal (UKZN) ethics committee. Approval was obtained from the UKZN ethics committee in June 2007 (Reference number E006/07) - see Appendix 1. Department of Health management, at the different levels, have an obligation to see to it that the rights and dignity of the patients using their facilities, and the staff working at the health facilities, are protected. It was necessary to assure the management that activities of health facilities, the staff, and the service users, were not potentially compromised by the study, and that the study would benefit the health services. Face-to-face interaction with management in meetings created an opportunity for managers to ask questions and obtain more information about the study from the principal investigator.

District and hospital management were informed about the selected clinics in their respective districts. A schedule of visits (which outlined the week of, rather than the day of, the visit) was sent to the clinic supervisors responsible for the selected clinics, at least two weeks prior to the visit. Such a schedule was essential to allow the clinic supervisor to inform the relevant clinic managers in advance. Thus data collectors were always expected by clinic staff when the arrived at the clinics, this facilitated better co-operation from clinic managers and staff.

Since the study was being conducted in partnership with the Department of Health, and was aimed at assisting the management to identify particular strengths and weaknesses in referral support systems between clinics and district hospitals in the 3 districts, all identified participants were obliged to participate. Participants were assured regarding their anonymity and the confidentiality; no identifying information relating either to interviewees or sampled clinics was recorded in the database or in the report. Health workers and clinic managers were invited to participate in reviews and interviews to provide information about their training. Nurses felt obliged to participate, owing to the fact that quality improvement of health services forms part of their responsibilities. The benefit inherent in the research was highlighted to the participants. Health workers were informed that the researcher also had an obligation to provide feedback on

the findings of the study to provincial and district management so that interventions are put in place to improve the gaps identified.

During the review of referral and feedback letters, no patient personal information was recorded on the checklists; data collectors ticked 'yes' or 'no' on the checklists to indicate if the essential information has been completed. Information on reasons for referral and treatment administered was either transcribed onto the checklist or letters were photocopied. Precautions were taken to obscure the patient's particulars, to protect the patients' identity. Names of clinics will not be mentioned in the report. The referral letters will be securely kept under lock and key for approximately 2 years in case a need arises to refer thereto in future. At the end of this period, letters will be destroyed. In most cases, checklists were used to record relevant information from the letters; in this case, only the name of the clinic was entered; names of practitioners were not recorded.

All completed data collection tools are kept safely under lock and key. The clinic name was recorded on the data collection tools in order to facilitate the process of data validation; the researcher would have the information readily available if there was a need to contact the clinic. However, only codes have been entered in the data-base. Names of the clinics will not be revealed in any reports or when feedback is suppled to the Department of Health.

Regarding the patient information, the upper section of the checklist was aimed at determining if referral letters actually contained all essential information (assessing the quality of letters); no patient name or identifying information was, however, recorded. In cases where letters were photocopied, only the lower part of the letter, relating to reasons for referrals and management, was photocopied. Confidentiality of patient information was stressed during training of data collectors, and they were provided with standard operating procedures to guide them in this regard.

Findings of the study will be shared with Area 3 Management and role players originating from different levels of health care service delivery in all 3 districts. All participating clinics will be informed of the relevant results. All these ethical precautions were discussed with all the

participants and managers. Patients were not informed, as their names were not envisaged to be utilised, and their identities were protected; the research also only dealt with filed copies of referral letters.

3.13 CONCLUSION

The above chapter has provided a detailed account of the methodology. Precautions taken during the study design and implementation to ensure the reliability and validity of data, as well as the credibility of results, have been discussed. The next chapter deals with the results obtained from the analysis of the collected data.

4   CHAPTER IV: RESULTS

4.1 INTRODUCTION

The following chapter outlines the results of the study. Data will be presented by means of tables and graphs. Although the study design and sampling did not include stratification by district, an attempt has been made to compare the results from the three districts; thus a 3-way comparison of the districts has been made, and p-values used to measure the differences between the 3 districts. It was not feasible to compare some variables as sample sizes were too small. Data on the years in which professional nurses were trained has been broken down into 3 periods: before 2002, between 2002 and 2006, and between 2006 and 2007. This breakdown serves to illustrate the proportion of nurses with current or updated information; this has an impact on the quality of services rendered by nurses at primary health clinics.

4.2   PARTICIPANTS

A total of 137 professional nurses, including clinic managers, were interviewed in the 58 clinics. The mean number of years of experience as professional nurses was 11 years, with a median of 7 years, and a range of less than 1 – 49 years. The table below illustrates the district breakdown for clinics and professional nurses that participated in the study.

Table 3: District breakdown of the number and percentage of clinics and respondents participating in the referral support study conducted in Area 3 between July and August 2007

DISTRICT	No of clinics in the district	No. of clinics visited	% of sample	No. of PNs interviewed	% of the sample	Average no. of PNs / clinic visited
Umkhanyakude	48	22	38%	45	33%	2
uThungulu	51	15	26%	42	31%	3
Zululand	49	21	36%	50	36%	2
TOTAL	**148**	**58**	**100%**	**137**	**100%**	**7**

4.3   TRAINING OF CLINIC NURSES (PROFESSIONAL NURSES)

Of the 137 clinic nurses, including clinic managers interviewed, 47 (34%) had completed a diploma in Primary Health Care. 23 (16%) were trained between 2002 and 2007, including 9 (7%) who were trained between 2006 and 2007; 24 (18%) were trained between 1973 and 2001. On the day of the visit, 33 of the 58 clinics visited (57%) were found to have at least one professional nurse with a PHC diploma on duty. The proportion of nurses trained in different short courses from 2002 to 2007 ranged between 4% (HIV and Infant Feeding) and 47% (Dispensing course). Those trained on short courses between 2006 and 2007 ranged between 3% (EDL) and 21% (TB). The percentage of clinics with at least one professional nurse trained on different short courses, on duty on the day of the visit, ranged from 10% (HIV and Infant Feeding) to 81% (HIV/AIDS counselling). Table 4 shows the number and percentage of professional nurses (PNs) trained; an additional table, Table 5, illustrates the percentage of clinics who had at least 1 professional nurse (PN) trained in various short courses, on duty on the day of the visit.

Table 4: Number and percentage of professional nurses working in the selected Area 3 fixed clinics, who reported having been in various courses.

Course	Total no trained (n = 137)	% trained	% trained between 2002 and 2007	% trained between 2006 and 2007
PHC Diploma	47	34	16	7
AIDS Counseling	70	51	35	12
Breast Feeding	28	20	18	4
Dispensing	68	50	47	15
Essential Drug List (EDL)	19	14	11	3
Expanded Programme on Immunisation (EPI)	44	32	20	4
Family Planning (FP)	55	40	26	9
HIV and Infant Feeding	6	4	4	3
HIV Management/ ARV	34	25	25	11
Integrated Management of Childhood Illnesses (IMCI)	61	45	40	11
Prevention of mother-to-child transmission (pMTCT)	43	31	30	12
Syndromic Management of STIs	45	33	26	9
TB Training	60	44	39	21

Table 5: Number and percentage of clinics in Area 3 discovered to have at least 1 professional nurse trained on duty, trained in any of the listed courses.

Course	No. of clinics with at least 1 PN trained n = 58	% of clinics with at least I PN trained
PHC Diploma	33	57
AIDS Counseling	47	81
Breast Feeding	21	36
Dispensing	43	74
Essential Drug List (EDL)	19	33
Expanded Programme on Immunisation (EPI)	31	53
Family Planning (FP)	29	50
HIV and Infant Feeding	6	10
HIV Management/ ARV	25	43
Integrated Management of Childhood Illnesses (IMCI)	44	76
Prevention of mother-to-child transmission (PMTCT)	35	60
Syndromic Management of STIs	32	55
TB Training	37	64

A 3-way comparison of the districts is presented in Table 6 below. Significant differences between the 3 districts were noted in the proportion of clinics with at least 1 professional nurse trained in dispensing, EDL, HIV Infant feeding, IMCI, and TB.

Table 6: Number and percentage of clinics with at least 1 professional nurse trained - comparison between districts.

Courses	Total n = 58		Umkhanyakude (n=22)		uThungulu (n= 15)		Zululand (n=21)		p-value
PHC Diploma	33	(57%)	14	(64%)	11	(73%)	8	(38%)	0.079
AIDS Counseling	47	(81%)	19	(86%)	12	(80%)	16	(76%)	0.693
Breast feeding	21	(36%)	7	(32%)	5	(33%)	9	(43%)	0.726
Dispensing	43	(74%)	20	(91%)	8	(53%)	15	(71%)	0.035
EDL	19	(33%)	3	(14%)	9	(60%)	7	(33%)	0.013
EPI	31	(53%)	12	(55%)	9	(60%	10	(48%)	0.757
Family Planning	29	(50%)	8	(36%)	8	(53%)	13	(62%)	0.235
HIV Infant Feeding	6	(10%)	5	(23%	1	(7%)		0	0.043
HIV management/ ARV	25	(43%)	11	(50%)	7	(47%)	7	(33%)	0.516
IMCI	44	(76%)	20	(91%)	12	(80%)	12	(57%)	0.032
PMTCT	35	(60%)	15	(68%)	9	(60%)	11	(52%)	0.571
STI	32	(55%)	10	(46%)	11	(73%)	11	(52%)	0.234
TB	37	(64%)	10	(46%)	9	(60%)	18	(86%)	0.022

4.3.1 Duration of short courses

Professional nurses reported varying durations on most of the short courses attended. With all the courses, there were some individuals who had attended the course for a shorter duration than recommended for that particular course (see table 6).

Table 7: Duration of short courses attended by professional nurses in Area 3.
(** Accepted Department of Health standard on course duration)**

Course	** Accepted standard		Duration	N (%) trained
AIDS Counseling	**	10 days	10 days	62 (45%)
			part of PHC course	7 (5%)
			part of HIV management	1 (0.7%)
Total				**69 (51%)**
	** standard not clear			
Breastfeeding			2 to 3 days	7 (5%)
			5 to 10 days	19 (14%)
			more than 10 days	1 (1%)
Total				**27 (20%)**
	** standard not clear			
Dispensing			1 to 5 days	50 (37%)
			10 days	4 (3%)
			1 to 3 months	10 (7%)
			4 to 12 months	4 (3%)
Total				**68 (50%)**
	** standard not clear			
EDL			1 to 3 days	12 (10%)
			5 days	4 (3%)
			10 days	2 (2%)
			part of PHC course	1 (1%)

Total			**19 (16%)**
	** 5 days		
Family Planning		Less than 5 days	6 (5%)
		5 to 10 days	32 (25%)
		more than 10 days	10 (9%)
		part of PHC course	8 (6%)
Total			**56 (45%)**
	**3 – 5 days		
HIV & Infant			
Feeding		2 days	2 (1%)
		5 days	4 (3%)
Total			**6 (4%)**
	** 3 – 5 days		
HIV management/	UKZN (9 days)		
ARV		1 to 2 days	4 (3%)
		3 to 5 days	23 (18%)
		9 days	6 (5%)
		more than 9 days	2 (1%)
Total			**33 (27%)**
	** 11 days		
IMCI		1 week	1 (0.7%)
		2 weeks/ 11 days	48 (35%)
		3 weeks	3 (2%)
		part of PHC course	9 (7%)
Total			**61 (45%)**
	** 3 days		
STI		1 to 2 days	11 (8%)
		3 to 5 days	32 (25%)
		part of PHC course	3 (2%)

Total		46 (35%)
	** 5 days	
TB	1 to 2 days	5 (3%)
	3 to 5 days	46 (34%)
	10 to 12 days	7 (5%)
	1 to 2 months	2 (1%)
Total		**60 (43%)**

** Accepted standard (duration)

4.4 COMMUNICATION

4.4.1 Availability of means of communication

Of the 58 clinics, 56 (97%) possessed telephones; 33/58 (57%) of clinics reported that their telephones had been out of order on at least one occasion in the last 6 months. Reports received ascertained that 37/58 (63%) of clinics, including those clinics that reported problems, utilised alternative forms of communication: Eight out of fifteen (14%) of clinics possessed cell phones provided by the Department of Health (DoH cell phones); 30/58 (53%) indicated the use of nurses' own cell phones; and 17/58 (29%) reported using two-way radios. However, 13/58 (39%) of clinics asserted that their alternative forms of communication were not always available or working. Furthermore, all the clinics that indicated use of nurses' own cell phones for official calls, maintained that nurses were not reimbursed for using their cell phones. There were no significant differences between the 3 districts concerning reported telephone problems and availability of alternative forms of communication (see Table 8).

4.4.2 Ability to phone for clinical advice

A total of 56/58 (97%) of the clinics reported being able to obtain telephonic clinical advice from the district hospital. Of the 2 remaining clinics, one clinic reported not being able to phone at all, due to a lack of airtime when using nurses' cell phone; the second clinic reported indicated that they phoned the clinic supervisor, who then liaised with the doctor.

Table 8: Number and percentage of Area 3 clinics reporting phone problems, possessing other forms of communication, and able to phone the district hospital for clinical advice.

Clinics	Total no of clinics n = 58	Umkhanyakude (n = 22)	uThungulu (n = 15)	Zululand (n = 21)	p-value
with phone problems	33 57%)	12 (55%)	9 (60%)	12 (57%)	0.947
with other forms of communication	37 (63%)	16 (73%)	9 (60%)	12 (57%)	0.534
able to phone for clinical advice	56 (97%)	22 (100)	15 (100%)	19 (91%)	0.161

4.5 REFERRAL LETTERS

Forty-two out of the fifty-eight clinics (72%) ascertained the use of the national standardised referral letter. Copies of referral letters for patients referred in the 3 months - March, April and May were found in 36/58 (62%) of clinics. Only 11/22 (50%) of Umkhanyakude clinics were using the standardised referral letter, compared to 13/15 (87%) in uThungulu, and 18/21 (86%) in Zululand. The result showed a significant statistical difference, with a p-value of 0.012.

4.5.1 Quality of Referral letters

A total of 360 letters were reviewed. A figure of 62 (17 %) thereof accounted for patients referred with chest problems, including coughs, difficulty in breathing, TB and chest pain; 63 (18%) concerned referrals with different types of injuries; 24 (7%) were for gastro-intestinal problems, including diarrhoea, vomiting and abdominal pain; 20 (6%) were referred for PV bleeding and abdominal pain; and the remainder were referred for eye and ear conditions (4%), pregnancy (4%), STIs (4%), and certain chronic conditions (4%).

The different types of injuries were the following: general injuries 38/360 (11%), injuries with an open wound 10/360 (3%), injuries due to dog bite and snake bite 8/360 (2%), injury due to burns 1/360 (0.3%), and head injuries 6/360 (2%). 11/360 (3%) of the letters were illegible, while 6/360 (2%) remained difficult to categorise due to poor case history. Other conditions consisted of small numbers with a range of 1% to 3% – see Annexure 3.

4.5.1.1 Adequacy of Information

4.5.1.1.1 Administrative Information

Patient details were recorded in more than 90% of the referral letters (surname 99%, name 99%, age 93%, and sex 94%); the patient's physical address was recorded in 85% of the letters. The clinic name was recorded in 98%, and clinic telephone number in 86% of the letters. The date of referral, and the name of the referring practitioner, was recorded in 98% and 94% of such letters, respectively.

4.5.1.1.2 Information on Presenting Problems

Table 9: Number and percentage of referral letters with essential information recorded.

Reason for referral	Total no. of letters reviewed	Essential information	No of letters with essential information recorded	% with essential information
Chest problem	62	Cough duration	50	81
		Presence/ absence of dyspnoea	39	63
Head injury	6	Consciousness	2	33
Open injury	19	Administration of tetanus toxoid	9	47
Diarrhoea & vomiting	30	Hydration status	16	53
		Administration of fluids	14	47
PV bleeding	20	Last normal menstrual period	10	50

| | Result of pregnancy test | 4 | 20 |

A comparison between districts showed no significant differences regarding recording of essential information in referral letters; this was probably due to the small numbers being compared.

4.5.2 Feedback letters

A figure of 38 of the 58 clinics (66%) reported never receiving any feedback letters when they have referred patients to the district hospital. There occurred statistically significant difference between the districts, p-value 0.001: in Umkhanyakude 10/22 (46%), in uThungulu, 9/15 (60%), and in Zululand only 1/21 (5%) clinics reported that they either sometimes or often received written feedback. Due to the low number of feedback letters found during clinic visits, no analysis of feedback letters has been performed.

4.6 AVAILABILITY OF TRANSPORT

4.6.1 Monitoring of transport for urgent referrals

Of the 58 clinics, a figure of 49 (84%) of clinics kept ambulance response registers to monitor the time taken by the ambulance to reach the clinic, from the time the first call was made. There were no significant differences between districts in terms of clinics keeping ambulance response registers. This study also found that there is no specific record kept by clinics for patients referred urgently; the available clinic register captures referrals, but fails to make this distinction.

4.6.2. Proportion of urgent referrals collected by the ambulance within 1 hour

During March, April and May 2007, an average of 2174 patients was seen per clinic. Ambulance response records showed that, on average, 10 ambulance calls were made for urgent referrals per clinic. An average of only 32% of urgently referred patients, for whom the ambulance was

summoned were collected by the ambulance within 1 hour. uThungulu clinics (11/15) had mainly tarred roads to the district hospitals, compared to the clinics in the other 2 districts, with more than half of the clinics having mainly gravel roads to the hospitals. See table 10.

Table 10:   Urgent referrals collected within 1 hour in Area 3

District	Average referrals/ clinic in 3 months	Average no of ambulance calls/ clinic in 3 months	Proportion collected within 1 hr (%)in 3 months
Umkhanyakude	83	11	28
uThungulu	99	5	40
Zululand	67	12	33

4.6.3   Transport for non-urgent referrals

Availability of planned patient transport (PPT) for non-urgent referrals was reported by 20 of the 58 clinics (34%); patients referred non-urgently mostly utilised public transport to get to and return from the hospital. It was noted that the 20 clinics originated from two of the three districts, i.e. Umkhanyakude and uThungulu. Availability of the PPT varied among the 20 clinics, the range was between once a week and 5 times a week. On average, the availability of PPT was reported to be 3 days a week; the median was 3 days a week. Only 1 clinic reported also possessing transport for patients returning from the hospital. In Zululand, no clinic had access to transport for non-urgent referrals.

4.7 AVAILABILITY OF GUIDELINES

The Essential Drugs list (Green book) was available in all clinics, and most clinics had clinical guidelines available. There were no significant differences between districts regarding the availability of the guidelines (see table 8).

Table 11: Availability of various guidelines in the selected fixed clinics in the 3 districts of Area 3.

Guidelines	Total (n=58)		Umkhanyakude n=22		uThungulu n=15		Zululand n=21	p-value
Referral guidelines	25	(43%)	6	(27%)	9	(60%)	10 (48%)	0.124
Obstetric guidelines	39	(67%)	16	(73%)	11	(73%)	12 (57%)	0.453
National ART step-by-step guide for management of children	35	(60%	21	(96%)	7	(47%)	7 (33%)	
Guidelines for management of HIV children (by Khomanani)	17	(29%)	10	(46%)	3	(20%)	4 (19%)	0.011
TB Manual/ Guidelines	46	(79%)	20	(91%)	12	(80%)	14 (67%)	0.146
PMTCT guidelines	43	(74%)	19	(84%)	9	(60%)	15 (71%)	0.178
Management of HIV in Adults	40	(69%)	16	(73%)	14	(93%)	10 (48%)	0.012
Essential Drug List (Green Book)	58 (100%)		22	(100%)	15	(100%)	21 (100)	N/A

4.8 CONCLUSION

This present chapter has indicated clearly the numbers of clinics and nurses who participated in the study, the numbers and percentages of professional nurses who had attended different courses, as well as numbers and percentages of clinics which possessed at least one professional nurse trained in various courses. The results have been presented on the availability and use of different means of communication; availability and quality of referral and feedback letters; availability of transport, for both urgent and non-urgent referrals; as well as the availability of different records and guidelines. District differences have also been highlighted, where applicable. Tables have been used to present some of the data graphically.

5   CHAPTER V: DISCUSSION

5.1 INTRODUCTION

This chapter critically reviews the results of the study, attempts to obtain possible explanations for the findings, and relates them to theoretical and conceptual frameworks. The results will also be discussed in relation to the available literature, to the findings of previous studies as well as to the hypothesis of this particular study. Although comparisons of districts will be discussed, caution will prevail when interpreting these, because no stratification by district was undertaken during sampling. Therefore, the sample size may lead to inaccurate conclusions being drawn in relation to the findings of different districts. However, it is of paramount importance that this in-depth analysis be conducted to highlight particular areas for further possible research and enquiry. Limitations inherent in the study and their specific impact on the interpretation of the results will also receive considerable focus.

5.2 DISCUSSION

5.2.1 Training of clinic nurses

The study showed that less than half (47%) of clinic nurses interviewed during clinic visits were PHC trained. On the other hand, it was discovered that, on the day of the specific review, a figure in excess of half of the clinics (57%) had at least one PHC trained nurse on duty. Such a percentage is 17% more than the percentage quoted in the National Department of Health Strategic Priorities 2004-2009; according to this document, only 40% of health facilities nationally had primary health care trained nurses serving therein. The increase observed in this study may indicate that the district management in the area of study is directing both its effort and focus to ensure that the norm stipulated by the National Department of Health is achieved (that each clinic should have at least 1 PN with a PHC qualification)(13). There were, however, major differences relating to the percentages of clinic nurses trained on the different short courses offered. Such a discrepancy might indicate that certain programmes are receiving more attention than others. During the period (2002 – 2007), and particularly in the last year (2006-2007), more clinic nurses received training in dispensing, Integrated Management of Childhood

Illnesses (IMCI), HIV/AIDS Counselling, HIV Management, PMTCT, and TB. When findings of the 2003 national PHC survey are taken into consideration, there appears to be a constant trend in prioritising the training of these programmes. The national PHC survey found that in KwaZulu-Natal, TB and HIV-related courses, including PMTCT, have been attended on a frequent basis in the past 12 months (23). In recent years, pressure has been exerted for prescribing nurses to be trained in dispensing; it is therefore not surprising to note that this is one of the areas where more nurses were found to have been trained.

IMCI constitutes a fairly new child health care strategy. The programme has been rolled out in KwaZulu-Natal since 2000 and has also received a considerable emphasis. Districts are striving to meet the national target of having 60% IMCI trained nurses per facility. In KwaZulu-Natal, IMCI training is closely monitored by the various districts, and data concerning IMCI training is being collected and submitted to the provincial authorities. In the current study, the percentage of facilities with at least one professional nurse trained in IMCI is higher (76%) than the percentage (35%) assessed in this same area during the KwaZulu-Natal IMCI facility review in 2005. Unfortunately, the referral support study only reviewed training of professional nurses found on duty on the day of the visit; therefore, it is not possible to report on the percentage of clinics with 60% of professional nurses who are IMCI trained. The KwaZulu-Natal 2005 IMCI review had demonstrated that only 34% of the clinics had achieved the 60% coverage target. The percentage of clinic nurses trained in TB, remains consistent with the 2003 National PHC Facility Survey finding (23). The emergence of X-DR TB has placed TB diagnosis and management under serious scrutiny and has resulted in the consequent scaling up of activities, including the training of health workers in TB diagnosis and management. Such an ongoing process may be indicated by the high percentage found by the referral support study, to have received training in the year prior to the study (21%), compared to the total percentage trained over 5 years (39%).

It remains an issue of concern that training of clinic nurses in PMTCT appears not to be progressing sufficiently rapidly when the essential role clinic nurses are expected to play in the integration of PMTCT into the mother and child health programme is considered. Five years ago, a study by the Population Council in KwaZulu-Natal showed that higher than 60% of professional nurses in the province had not yet been trained in PMTCT (37). The reality remains

the same in area 3. It is hoped and anticipated that additional PMTCT training for nurses will be provided since the introduction of PMTCT dual therapy in April 2008. Another evaluation may need to be conducted to determine whether an improvement in numbers can be witnessed as occurring, following dual therapy introduction. Although approximately two-thirds of professional nurses in Area 3 had not been trained in HIV management, it is encouraging to note that 11% (of the 25%) were trained in the year prior to the study. This indicates that this particular training has been accelerated, and is commendable since professional nurses remain at the forefront of the comprehensive management of HIV and AIDS pandemic. Family planning and STI training appear not to be receiving much attention - this study has not witnessed any change compared to the 2003 Population Council findings (46% of clinic nurses were providing FP services, and 34% providing STI services, without receiving any training)(37). This may be due to greater emphasis placed on HIV and TB training at the expense of both Family Planning and STI training; this also points to a lack of integration, despite the introduction of HAST (Integration of HIV & AIDS, STI and TB programmes).

It is also surprising that only a few nurses stated they had received training in the Essential Drugs List; it is expected that when the new (revised) EDL is distributed to clinics, clinic nurses will indeed receive training; the newly appointed nurses need also to be trained. When focus group discussions were conducted with doctors, as part of the overall referral and support study, some doctors believed that clinic nurses were not using the EDL, leading to the poor management of patients and the inappropriate referrals to doctors(27). Systematic reviews by Cochrane and Grimshaw *et al* have led to suggestions that effective use of guidelines depends, among others, on using teaching as a dissemination strategy (34, 35).

The significant differences found between the 3 districts concerning the number of clinics found with at least 1 professional nurse trained in some courses may point to, either differences in district priorities, or differences in district capacity to train certain topics. This area may need to be explored further. For example it is not clear why Zululand featured better in TB training than the other 2 districts which have shown better performance in most of the courses. The only possible explanation lies in the possibility that the HAST co-ordinator in this district had been more actively involved in training than in the other 2 districts. The high percentage of nurses

trained in AIDS counselling must be commended, considering the increasing role of the clinic nurse in HIV management. This is an interesting finding, that may need to be monitored further, since there have been perceptions that lay counsellors are prioritised over clinic nurses in relation to HIV/AIDS training (informal communication with clinic nurses). It would appear that district management appreciate the crucial role played by clinic nurses both in HIV management and in providing support to lay counsellors.

The bigger referral and support study did establish that about half of the clinics received a visit from a PHC trainer; the study, however did not establish who was responsible for the training of professional nurses on the various short courses. The study also failed to link the skills audit and the training conducted in the year prior to the study; therefore, no conclusions can be made about whether skills audits are used effectively to identify and respond to the training needs of the staff.

Although some guidelines on the accepted duration of courses should be developed for each of the training courses, discrepancies were found in the number of days professional nurses had attended short courses. This may be due to the training being offered by different institutions, or the periodic review of the duration of courses, over time. An example thereof occurs in relation to family planning training. The training used to be 3 weeks in duration and was then reduced to 2 weeks; recently, the duration of such training has further declined to only 5 days. No further analysis was performed to compare course duration and the year or period of training, due to the low number of participants. However, it must be noted in some cases, major discrepancies, do indeed exist, such as some professional nurses being trained for 1 day on a particular topic, when others have received training for 5 days thereon. Such a difference has untoward implications on the practice of such individuals; this has a bearing on whether clinic nurses are adequately equipped with knowledge and skills to assess, diagnose and managed patients effectively. Thus, appropriate referral of patients may be compromised. Informal enquiry from different PHC trainers revealed that, for most short courses, no clear standard duration is stipulated. The impression is created that most of these short courses lack regulation. It also came to light that training within districts and even sub-districts is not standardised. Factors such as the availability of dedicated trainers, and the availability of dedicated time to conduct training may be

contributing to the prevailing status quo. These issues need to be explored further, in conjunction with the question of follow-up after training to ensure that what has been learnt is being implemented. According to the National Health Act 2003, guidelines have to be developed to ensure that staff are appropriately trained(21).

5.2.2   Communication

Availability of telephones has witnessed continual improvement over recent years, the referral support study found that 97% of the clinics possessed telephones, a factor confirming previous findings the National Primary Health Care Facility Surveys (23). However, telephone interruptions continue to pose a challenge in many clinics, as was discovered during the 2003 National Primary Health Care Facility Survey. In respect of the referral support study, despite more than half of the clinics (57%) reporting telephone interruptions at least once in the past 6 months, most nevertheless indicated their ability to use alternative means of communication. It is commendable that certain clinics, although few in number, had been provided with Department of Health cell phones. A major concern relates to the reported use of nurses' own cell phones, a development attested to by more than half of the clinics, when telephones are out of order. The main problem inherent in this arrangement is that nurses are not always in a position to use their cell phones, either due to the lack of air time, or insufficient network coverage. However, it was pleasing to ascertain that nurses are able to make use of the available means of communication, and access the important clinical guidance from district hospitals.

5.2.2.1   Referral Letters and Feedback letters

A significant number of clinics, almost 30% thereof, were not using the national standardised referral letter. The reasons for the failure, on the part of clinics, to utilise the prescribed referral letter remains unclear; this may be due to clinics running out of stocks, as suggested by some doctors who participated in the focus group discussion(27). The impression gained during the discussion with doctors was that use of the national referral letters was neither reinforced nor well-supported by doctors themselves(27). The fact that over a third of clinics (38%) failed to retain copies of referral letters may indicate that the importance of referral letters is not fully appreciated. The lack of written feedback observed in the study confirms what has been reported

in some of the studies reviewed. The doctors participating in the 2 studies undertaken in the public sector cited being overworked, and the poor quality of referral letters written by nurses as some of the reasons for not writing back to nurses(27, 28). Although this may be true, it means that nurses are denied the opportunity of learning from their referrals, as it is expected from a contact with hospital doctors(19). Although most nurses reported positively on their ability to receive clinical guidance when phoning the doctors, written feedback or back referral remains of equal importance. Another factor that may impact on poor written feedback is that of feedback letters being given to patients, as was found by Smith *et al*(28).

It has not been proven beyond doubt that improved quality of referral letters improves feedback. Studies that have been conducted among general practitioners in different contexts (South Africa and Australia), with regard to the content of the referral letters, found no improvement in feedback, despite improved content of referral letters(29, 32).

In the current study it has been established that, while most letters contained most of the required administrative information, information on reasons for referral, and management of patients remains very poor. Most letters did not have important history that could have led to a provisional / differential diagnosis; current management, prior to patient referral, was mostly not recorded. It remains unclear whether this factor is due to poor history taking skills, inadequate clinical examination skills, lack of understanding of what needs to be included in the referral letter or just mere laziness to write on the part of the clinic nurse. The study did not determine whether there were any differences in the quality of letters written by PHC trained nurses, as compared to those written by non-PHC trained nurses. The fact that nurses do not receive feedback from their doctors may also have contributed to their lack of interest; this may be among the reasons why some nurses remain unmotivated to use the national referral letter. On the other hand doctors state that the reason for not replying to nurses is poor qualities letters they receive from nurses (28). If doctors are not replying, and do not give nurses feedback, the quality of referral letters may not improve. A point needs to be made that, improvement of referral letters may not necessarily lead to improved feedback by doctors; as some studies have shown that improved quality of referral letters does not result in improved response rates (28, 29).

More work needs to done to determine why nurses do not use referral letters effectively. Poor use of referral letters is not a phenomenon occurring only in public sector settings in South Africa. Studies conducted with general practitioners both in developing and developed countries have found poor use of referral letters and in adequate content(26, 31). Most of the literature found on the use of referral letters has focused on research done with general practitioners. It appears that inadequate attention has been paid to explore factors influencing the use of referral letters by clinic nurses. Further research needs to be undertaken in this regard so that strategies are developed to improve this aspect of communication.

5.2.3   Availability of transport

With the poor response times recorded in relation to emergency referrals reported in the 2006/2007 KwaZulu-Natal DoH annual report, it would be anticipated that strict measures are implemented, and enforced by health facilities to monitor ambulance response rates. It was astonishing that some clinics, though few, did not have such record.

When observing the number of occasions an ambulance was called by facilities, where ambulance response records were kept, it was ascertained that the response times have failed to demonstrate any improvement from that which was reported in the 2006/07 provincial annual report. The 2003 National PHC Facility Survey found that, in all provinces, except the Northern Cape, the ambulances were taking a longer than expected period of duration to reach facilities. KwaZulu-Natal recorded the median actual time of 162 minutes, instead of the expected 63 minutes. According to the KwaZulu-Natal 2006/07 annual report, a mere 30% of rural facilities were reached by the ambulance within an hour. The referral support study did not document the actual time taken by the ambulance to arrive at the facilities. However, the findings do confirm the situation that prevailed in the 2003 National Primary Health Care Survey - less than a third of the urgently referred patients were collected within 1 hour.

The status of transport for non-urgent referrals was also found to be poor, since only a third of facilities reported having planned patient transport, a figure lower than that of the provincial coverage (40%) reported in the 2006/07 annual report. A shortage of ambulances has been identified as the main reason for not meeting the targets set for ambulance response times. Such a reality was consistently alluded to during focus group discussions with clinic nurses, and

interviews with clinic supervisors, in relation to transport problems(44, 45). The area EMRS manager later confirmed this unfortunate reality in a meeting where referrals were discussed.

It appears that the dire situation of a gross ambulance shortage, reported in 2005, nevertheless persists. It is difficult to understand the reason for the discrepancy between the 3 districts; on the one hand, the two districts are able to provide transport for non-urgent referrals, while Zululand district remains incapable. Such an inadequacy may indicate an inefficient use of resources by district EMRS management and /or failure by health managers to voice the concerns of their patients. Such a situation does not augur well for achievement of not only the national and provincial priorities, but also impacts on the Millennium Development Goals (MDGs). Delayed referrals have already been suggested as constituting one of the factors contributing to the high rate of maternal deaths in KwaZulu-Natal(7).

5.2.4 Availability of guidelines

All facilities possessed copies of the Essential Drugs List (EDL or Green book). Such a situation is consistent with that found in 2003 during the National PHC Facility Survey. The researcher needs to indicate the research team did not check whether each consulting room had a copy of the EDL. It is also a pleasing factor that most clinics had most of the key guidelines readily available. However, during data collection, it was noted that, in respect of some of the clinics, guidelines were kept in cupboards, and some clinic managers were unaware which guidelines were available in their clinics (report by data collectors). Thus, further questions are raised as to whether the available guidelines are being used effectively. The study did not check if other professional nurses, other than the clinic manager, were also aware of the available guidelines. As indicated earlier, doubts have also been raised concerning the use of the EDL - availability of the guidelines does not necessarily mean that health workers will make use thereof.

Regarding referral guidelines, less than half of the clinics stated that they had referral guidelines. A few facilities possessed a copy of generic guidelines received with the national standardised referral letters. For most clinics, the schedule of dates/ days received from district hospitals in order to inform clinics in relation to the appropriate days and time to refer patients for the

various services/ clinics, was itself regarded as the referral guidelines. From this study, it is clear that clinic nurses rely predominantly on the EDL for guidance as to who and when to refer. Such an observation is based on the assessment and clinical findings. The available clinical guidelines need to be strengthened by clearly defined processes of referring patients. Such a goal could be achieved by the development of clearly written guidelines that outline the following matters: how to go about arranging the referral, address issues of communication before and after referral (who to contact, when and how, address how to arrange transport, and address how to deal with challenges encountered. Guidelines need, most importantly, also to address how feedback will be given, and what steps will, or should be taken if no such feedback has been received. Districts are expected to hold clinical forums to discuss referral protocols; such a process needs to acquire a broader view of referral processes.

5.3   BIAS AND LIMITATIONS

During the study design phase, no stratification by district was undertaken; therefore, district comparisons that have been made might not supply the true overall picture, since the sample size may be too small to make definitive conclusions. The study sought to review both referral and feedback letters; however, it proved impossible to review feedback letters, due to the small number of feedback letters obtained at the clinics. Although the quality of referral letters was reviewed, most conclusions are based on a small sample of a few letters. For example, an assessment was based on a survey of 6 letters on head injuries. Bias could have arisen from the fact that data collectors were required to transcribe some letters in cases where photocopiers were not available. Furthermore, the decision was made by researchers to confine the assessment of letters to certain conditions. Analysis of the referral letters was done independently by 2 doctors; the first doctor was involved in the study, while the second doctor was not. There were no tests done to validate the agreements made by the 2 doctors. Illegibility of some letters was also a limitation. No data was collected on the professional nurses who had written the referral letters; it was, therefore, not possible to compare the quality of those referral letters written by PHC trained nurses to those written by non-PHC trained nurses. It would have been valuable to ascertain if PHC trained nurses wrote good referral letters. Although there was a small number of urgent referrals for which an ambulance was called, comparisons between districts have been

made; therefore, conclusions need to be made with great care. If records of a longer period - for example, the last 12 months - rather than a period of 3 months had been reviewed, comparisons would have proved more authoritative.

The study only reviewed the availability of guidelines: it did not observe practice, nor assess knowledge of participants in determining if the guidelines are being utilised effectively. Conclusions relating to possible inadequate use of guidelines have been arrived at after assessing the quality of referral letters. It is acknowledged that other factors that contribute to the poor quality of referral letters, may also be present; future studies need to concentrate on the use of such documentation by nurses. The study also did not check whether all professional nurses were aware of the availability of the various guidelines in their clinics.

5.4 CONCLUSION

In this chapter, the findings of this study have been compared with the findings of other studies previously conducted on this topic. Some findings have been proved to be consistent with or have confirmed, what has been understood by the other studies. In some cases, it has been possible to appreciate the improvements made when compared to earlier findings. Possible reasons have been furnished to explain certain of the conclusions arrived at. Based on these findings, it can be argued that the hypothesis of this study (that referral of patients between primary health care clinics and district hospitals in Area 3 is undermined by inefficient communication, problems with transportation of patients, and inadequate support of clinic nurses by the district hospitals) is indeed true. It must, however, be noted that both referral and feedback letters, as well as transportation of patients continue to pose greater challenges. Suggestions have been made concerning further studies that need to be undertaken to explain some phenomena which this study failed to provide an explanation for, or even to answer questions arising from this study.

The following chapter will deal with conclusions and recommendations.

6   CHAPTER VI: CONCLUSIONS AND RECOMMENDATIONS

6.1 *INTRODUCTION*

The final chapter presents conclusions based on the findings discussed in the previous chapter. In framing the conclusions, attention will be devoted to the research questions posed, as well as the theoretical framework of the study. The chapter will also discuss certain recommendations both to improve the referral support system and to allow for further research to be undertaken.

6.2 *CONCLUSIONS*

The study sought to answer a list of questions that the researcher considered important in determining the quality of the referral system. The researcher selected key components crucial for the effective functioning of the referral system. Each of the research questions will be highlighted.

- **Are clinic nurses trained to assess, manage, make decisions on, and organise referrals?**

Gaps in the training of professional nurses continue to exist, both with regard to the PHC diploma, and in respect of the in-service training for the short courses so necessary for provision the of comprehensive services at primary health care clinics. The low percentages of trained professional nurses has the consequence that many professional nurses working in the clinics possess no appropriate knowledge and skills to assess and make the appropriate decision for effective management of patients, including those needing referral.

- **Do nurses have clear guidelines as to their scope of practice? Are there clear referral guidelines to guide nurses on which conditions to refer, when, and how?**

The Essential Drugs List (EDL), which guides clinic nurses on how to manage different conditions at clinic level and when to refer to a higher level, is widely available. Various

guidelines are available in most clinics. The extent to which the EDL and the guidelines are being used by clinic nurses remains unclear, and has not been assessed in this study.

There are no clearly written referral guidelines to guide clinic nurses on how to arrange referrals, how to deal with logistical problems encountered when arranging referrals, how to write quality referral letters and how to deal with the lack of feedback.

- **Is there communication between clinics and district hospitals? What is the quality of the communication?**

It is clear in this study that telephonic communication between clinics and hospitals is at an acceptable level, and has proven to be effective. Such a situation prevails despite the reported telephonic interruptions. The success of this communication is confirmed by the fact that most nurses concurred regarding the aspect of always being able to receive telephonic clinical guidance from hospital doctors. The issue of nurses' personal cell phones being used to contact the hospital, without any reimbursement, needs to be looked into.

- **What is the quality of referral letters written by clinic nurses?**

There are strong indications that clinic nurses are writing letters of a very poor quality. When it is borne in mind that the referral letters are intended for use as a means to ensure clear that communication concerning the patients' condition is transmitted between health workers; the letters reviewed failed in this regard. Most of these referral letters did not contain the most crucial information. Such a factor raises questions about the training and supervision of clinic nurses. The national standard referral letter is also not used by all the clinics, a reality which means that not enough effort is exerted, on the part of management, to enforce use of the standardised letters.

- **Do doctors guide clinic nurses when nurses refer patients? Do nurses have an opportunity to learn from the referrals they send to, or receive from, district hospitals?**

Written feedback from hospital doctors remains virtually non-existent. As feedback constitutes one of the ways whereby doctors can teach nurses, so that the latter can improve both on their patient assessment skills, and the quality of the letters they produce; it can be concluded that no learning actually occurs in the process of referring patients to district hospitals. It appears the sole occasion where nurses can learn is when they phone for clinical guidance, and, thus, insufficient opportunities are created to guide or teach nurses.

- **What is the status of transport for referred patients?**

The study shows that emergency transport in rural areas remains poor despite the national and provincial Department of Health's commitment to the improvement of emergency transport. Monitoring of ambulance response by clinics is not enforced by all clinic supervisors, and there is no clear indication of how the data collected by clinics is utilised in addressing the transport problems. Transport for non-urgent referrals is also unsatisfactory and has not been implemented in most of the clinics.

- **Do clinics keep records on referred patients?**

Record keeping is inadequate, as demonstrated by the evidence that some clinics fail to keep copies of referral letters, as well as maintaining an inadequate record of urgently referred patients. Records kept on patients who have been urgently referred are only limited to those patients for whom an ambulance is called; no readily available record is obtainable for the other patients who may have been transported by private transport. Absence of such records means that, in clinics where this ambulance register is not kept, no record of urgently referred patients exists.

- **What are the strengths and weaknesses of the referral system in Area 3?**

The study reveals a weak referral system, due to certain of its components or referral support systems not functioning well. For any system to function effectively, all components need to work effectively. Bearing in mind Donabedian's model, any weakness in the structure leads to weak processes, which further results in poor outcomes. The weakness in the structure is reflected in the poor support received from district hospitals; non-adherence to norms and standards set by both the national and provincial departments of health; lack of clear, and inadequate use of guidelines; inadequate training of staff; as well as poor transport. The situation has resulted in weak processes; the obvious ones, in this particular study are the poor quality of referral letters and the lack of feedback from district hospital doctors. The quality of letters written by clinic nurses may serve as an indicator of poor knowledge and skills to assess and manage patients. Such inadequate communication occurring between these two levels of health care, in conjunction with transportation problems, negatively affects the continuity of care. Patients are not always managed properly, nor are they referred timeously; this may result in dissatisfaction arising among patients, and contribute to low staff morale. A strategy needs to be developed to enforced drastic changes; the next section outlines recommendations for improvement of the referral support systems in Area 3.

Table 12: Summary of conclusions reflecting the levels of acceptability of the referral components, and the urgency of the intervention required in relation to the various referral system components in Area 3.

Component	Status	Intervention required
Training of clinic nurses	Unacceptable	Urgent
Referral and feedback letters	Unacceptable	Urgent
Availability of transport	Unacceptable	Urgent
Availability of guidelines	Fairly acceptable	Somewhat urgent
Availability of communication	Acceptable	Important, but no urgent

6.3 RECOMMENDATIONS

As indicated in the section above, some components of the referral system require more urgent attention than others. Recommendations proposed will be rated as urgent (***), somewhat urgent (**), and important, but not urgent (*).

Rating	Referral support component	Recommended actions
Urgent ***	**Training of clinic nurses**	• Regular skills assessment are to be conducted by clinic managers, supervisors and primary health care trainers • Training plans need to be drawn up, and implemented to address the training needs identified • Based on the results of the skills audits conducted by clinic supervisors, each sub-district (hospital) should set training targets for clinic nurses • Training targets and implementation of such training should be monitored regularly, both at sub-district and district levels
Urgent ***	**Referral and Feedback letters**	• Clinic nurses must, as a matter of urgency be trained in relation to the writing of referral letters • Clinic managers and supervisors need to periodically review referral letters, and provide feedback to the staff • Hospital management need to develop strategies to improve and enforce the writing of feedback letters by doctors • Mechanisms need to be developed to monitor

		doctors' feedback to clinics
Urgent ***	**Transport for referrals**	• Clinic managers and supervisors need to enforce, and monitor the use of appropriate referral records, including ambulance response registers • District and hospital management, including supervisors, need to use the data collected by the clinics on ambulance response times to advocate for the improvement of transport
Somewhat urgent **	**Availability and use of guidelines**	• Clinic managers, supervisors, trainers and programme co-ordinators must ensure that all guidelines are available • Clinic nurses should be trained on the use of all the guidelines • Clinic managers and supervisors should ensure that guidelines are easily accessible, and need to monitor the use thereof • Doctors visiting clinics should schedule sessions for teaching clinic nurses, and for discussing clinical guidelines • District and hospital management should ensure that guidelines, especially referral guidelines, are developed, or reviewed, and distributed to all clinics
Important, but not urgent *	**Communication technology**	• Managers need to develop a strategy to improve communication • Clinics encountering regular telephone problems should be provided with DoH cell phones, with air-time • A system must be developed for

| | | reimbursement of nurses who use their own cell phones for official calls |
| | | • Improvement of communication through the use of emails should also be considered |

6.4   RECOMMENDATION FOR FURTHER STUDY

It is recommended that more studies on the use of referral letters by nurses be conducted; such studies should include the interviewing of patients about their experiences with referrals, especially their perceptions of referral letters. Unfortunately, the referral support study did not include this important component, due to logistical reasons. A more in-depth study on nurses' referral letters is proposed. The overall referral and support study (unpublished) did collect a vast amount of data on referral and feedback letters, through focus group discussions with clinic nurses, supervisors, and doctors. It is strongly recommended that this report be published so that more light is shed on this particular topic. Such publication will also help guide the approach to subsequent studies.

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8. APPENDICES

APPENDIX A

KZN Department of Health Approval

UKZN Ethics approval

HEALTH
KwaZulu-Natal

Health Research & Knowledge Management sub-component
10 – 103 Natalia Building,
330 Langalibalele Street
Private Bag x9051
Pietermaritzburg
3200
Tel.: 033 – 395 3070,
Fax.: 033 – 394 3782
Email.: Scelo.dlamini@kznhealth.gov.za
www.kznhealth.gov.za

Reference : HRKM032/07
Enquiries : Mr. S.S. Dlamini
Telephone : 033 – 395 3070

23 May 2007

Centre for Rural Health
Nelson R. Mandela School of Medicine
Private Bag 7
Congella, 4013

Dear Ms. Nkosi

Subject: The quality of referral and support systems research project

1. The research proposal entitled **Investigating the quality of referral and support systems between different levels of primary health care delivery in Area 3 of KwaZulu-Natal Provincial Department of Health** was reviewed by the KwaZulu-Natal Department of Health. The proposal is hereby **approved** for research to be undertaken at the facilities identified in your proposal.

2. You are requested to undertake the following:
   a. Meet with Mr. S.S. Dlamini before the research commences to discuss and agree on the project plan including the assignment of a Researcher from the Department of Health to work with you on the research project:
      1. Date: 30th of May 2007
      2. Time: 12h00
      3. Venue: Natalia Building, South Tower, 10th Floor, Office: 103
   b. Make the necessary arrangement with the identified health facilities before commencing with your research project.
   c. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.

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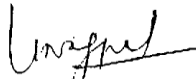
uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to scelo.dlamini@kznhealth.gov.za.

For any additional information please contact Mr. S.S. Dlamini on 033-395 3070.

Yours Sincerely

Dr. S.S.S Buthelezi
Chairperson: Provincial Health Research Committee
KwaZulu-Natal Department of Health

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* KINDLY RETURN **ALL DOCUMENTATION** WHEN REPLYING

UNIVERSITY OF KWAZULU-NATAL

BIOMEDICAL RESEARCH ETHICS ADMINISTRATION
Research Office
Room N40 - Govan Mbeki Building
University Road, WESTVILLE CAMPUS
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604769 - Fax: 27 31 2604609
Email: ▮▮▮▮▮ - Website: ▮▮▮▮▮

07 June 2007

Mrs Phumla Nkosi
Centre for Rural Health
Nelson R Mandela School of Medicine
University of KwaZulu-Natal
Fax Number: 031-2601585

Dear Mrs Nkosi

PROTOCOL: Investigating the quality of referral and support systems between different levels of primary health care delivery in area 3 of KwaZulu-Natal Provincial Department of Health. Mrs P Nkosi, Centre for Rural Health. Ref: E006/07

The Biomedical Research Ethics Committee considered the abovementioned application and the protocol was approved at its meeting held on 13 February 2007 pending appropriate responses to queries raised. Your responses dated 01 June 2007 to queries raised on 26 April 2007 has been noted by a sub-committee of the Biomedical Research Ethics Committee. The conditions have now been met and the study is given full ethics approval and may begin as at 07 June 2007.

We acknowledge receipt of the following documents:
Approval letter dated 23 May 2007 from the Department of Health
Completed Approval forms from the various hospital managers

This approval is valid for one year from 07 June 2007. To ensure continuous approval, an application for recertification should be submitted a couple of months before the expiry date. In addition, when consent is a requirement, the consent process will need to be repeated annually.

I take this opportunity to wish you everything of the best with your study. Please send the Biomedical Research Ethics Committee a copy of your report once completed.

Yours sincerely

DR J MOODLEY
Chair: Biomedical Research Ethics Committee

APPENDIX B

Data collection tools

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

REFERRAL AND SUPPORT SYSTEMS
FACILITY REVIEW TOOL

INSTRUCTIONS:

Please fill out this questionnaire by:
1. *Interviewing a clinic based supervisor /sister in charge or deputy (fixed clinic)*
2. *Conducting a record review (client register; monthly clinic data, referral register/ ambulance response register; copies of referral notes; copies of doctors' feedback letters; referral guidelines; STGs; doctors' visits roster; record of supervisory visits; record of Community Health Workers' activities.*

A. ADMINISTRATIVE INFORMATION

A1	District Code	Umkhanya-kude 1	uThungulu 2	Zululand 3	A2	Referral Hospital (name & code)	Name: .... Code: ....
A3	Telephone Number				A4	Fax Number		No fax -3
A5	Date of visit	__ __/__ __/__ __ __ __ DD MM Y Y Y Y			A6	Time of visit	____ / _____ HH MM
A7	Interviewed by				A8	Designation of person being interviewed (eg PN)	
A9	Type of road from clinic to referral hospital	Mostly Tarred 1	Mostly Gravel 2		A10	Time taken to reach referral hospital	Hours............. Minutes.............

B. STAFF TRAINING

Complete sheet for each PN on duty today

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

C. REFERRAL SYSTEM

C6	Does this clinic receive written feedback from referrals sent to the district hospital? *If never, skip to C8*	Never 1	Rarely 2	Sometimes 3	Always 4
C7	How is written feedback received by clinic staff? *More that one option allowed* *Do not read options*	Letter given to patient to deliver to the clinic 1	Letter delivered to clinic via hospital transport 2	Letter delivered by PHC supervisor 3	Letter sent by fax 4
		Other (specify)			

Transport				
C8	How often does this clinic provide transport for non-urgent referrals?	Never 1	Sometimes 3	Always 3
C9	How often is transport provided for patients returning from the district hospital?	Never 1	Sometimes 3	Always 3

Community health worker referrals			
C10	Does this clinic receive referrals from community health workers? *If no, skip to C13*	Yes 1	No 2
C11	Are there any records of CHW referrals? eg letters, register *If no, skip to C13*	Yes 1	No 2
C12	Number referred by community health workers in March, April & May 2007	March 07	April 07	May 07

Referral letters			
C13	Does this clinic use the national standardized referral letter? *(Show a copy)* *If yes, skip to C14*	Yes 1	No 2
C13.1	Does the clinic use any another standard format? *(If yes, please ask for a copy)*	Yes 1	No 2

Communication				
C14	How many times was the clinic telephone out of order in the last six months?			
C14.1	The last time the clinic telephone was not working, how long did it take to repair?				
		Hours	Days	Weeks	Months
C14.2	Does the clinic have a second line or a fax line that can be used when the telephone line is out of order?	Yes 1	No 2

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

	DoH cellphone				
C15	Does this clinic have a DoH cellphone? *If no, skip to C16*			Yes 1	No 2
C15.1	Do clinic staff use the DOH cellphone?	Never 1	Sometimes 2		Often 3
C15.2	Are clinic staff always able to use the DoH cellphone? *If yes, skip to C16*			Yes 1	No 2
C15.3	If no, reasons for not always being able to use DoH cellphone:				

	Radio				
C16	Does this clinic have a radio for communication? *If no, skip to C17*			Yes 1	No 2
C16.1	Do clinic staff use the radio for communication?	Never 1	Sometimes 2		Often 3
C16.2	Are clinic staff always able to use the radio for communication? *If yes, skip to C17*			Yes 1	No 2
C16.3	If no, reasons for not always being able to use radio for communication:				

	Own cellphones				
C17	Do clinic staff use nurses cellphones (their own cellphones) for clinic communication? *If no skip to C18*	Never 1	Sometimes 2		Often 3
C17.1	Are clinic staff always able to use their own cellphones? *If yes, skip to C18*			Yes 1	No 2
C17.2	If no, reasons for not always being able to use their own cellphones?				

	Clinical advice				
C18	Are you able to phone the hospital for clinical advice, if you are not sure how to manage a patient? *If no, skip to C18.2*			Yes 1	No 2
C18.1	If yes, how often do you get help?	Never 1	Sometimes 2	Always 3	
C18.2	If no, why are you not able to phone for clinical advice on how to manage a patient?				

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

		Computer		
C19	Does this clinic have a computer? *If no, skip to section D*		Yes 1	No 2
C19.1	Is the computer used by the professional nurses? *If no, skip to section D*		Yes 1	No 2
C19.2	What do the professional nurses use the computer for? *(Make a note if unable to give a response)*			
C19.3	Does the clinic computer have intranet access? *If no, skip to C19.6*		Yes 1	No 2
C19.4	Do the professional nurses use the intranet? *If no, skip to C19.6*		Yes 1	No 2
C19.5	What do the professional nurses use the intranet for? 			
C19.6	Does the clinic computer have e-mail access? *If no, skip to section D*		Yes 1	No 2
C19.7	Do the professional nurses use the computer to send e-mails?		Yes 1	No 2

Referral & Support Baseline

4

FORM 1: FACILITY REVIEW

A1	Clinic name			A2	Clinic code	

D. SUPERVISION

D1	Does this clinic have a PHC / Institutional supervisor? **If no, skip to D20**					Yes 1		No 2
D2	Title of the PHC / Institutional supervisor	AD 1	CPN 2	SPN 3	PN 4	Other (Specify)		
D3	How often on average does the PHC supervisor visit this facility?	More than once a month 1	Monthly 2	Every two months 3	Every three months 4	Other (Specify)		
D4	When did the PHC supervisor last visit the clinic?		DD		MM		YY	
D5	What was the purpose of this visit?							
D6	Does the clinic keep a record of dates of past supervisory visits? **(Observe)**					Yes 1		No 2
D7	How many supervisory visits were conducted in March, April & May 2007?			March 07		April 07		May 07
D7.1	How are the PHC supervisors visits arranged?	Roster given ahead of time 1		Telephone in advance 2	Arrive unexpectedly 3	Other (Specify)		

	Feedback			
D8	How frequently does the supervisor give feedback to nurse in charge on the outcome of the visit?	Never 1	Sometimes 2	Always 3
D9	How frequently does the supervisor give feedback to all clinic staff on the outcome of the visit?	Never 1	Sometimes 2	Always 3
D10	Does the clinic have a copy of a report written by the supervisor of the outcome/ content of supervisory visits? (Observe)	Yes 1		No 2
D11	**Look at report of supervisor's LAST VISIT OR ask the in-charge to tell you** Activities undertaken: Recommendations made: 			
D12	Do you keep your own written record of the outcome or content of supervisory visits? **(Observe to confirm)**	Yes 1		No 2

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

D13	When was the last time this clinic contacted the PHC supervisor? *If never, skip to D15*	Never -3	In the last week 1	In the last month 2	In the last three months 3	In the last six months 4	More than 6 months ago 5
D14	What was discussed?						
D15	When was the last time this clinic contacted the PHC supervisor for clinical advice?	Never -3	In the last week 1	In the last month 2	In the last three months 3	In the last six months 4	More than 6 months ago 5
D16	When was the last time the PHC supervisor conducted a skills audit of the professional staff at this clinic? *If never, skip to D18*			Never -3	In the last 6 months 1	In the last year 2	In the last two years 3
D17	What action was taken as a result?						

D18	How would you rate the supervisory visits?	Very helpful 1	Helpful 2	Not helpful at all 3
D19	What suggestions would you make to improve supervisor's visits?			

Other sources of clinical support				
D20	Do you get clinical support from anyone other than a PHC supervisor? *If no, skip to D21*		Yes 1	No 2
D20.1	Who gives you clinical support other than the PHC supervisor? *Do not read out options* *More than one option allowed*	Visiting therapist 1	Visiting Dr 2	PHC trainer 3
		Other (Specify)		

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

	PHC Trainer					
D21	Does the PHC trainer visit this clinic? **If no, skip to Section E**				Yes 1	No 2
D22	How often does the PHC trainer visit the clinic?	More than once a month 1	Monthly 2	Every two months 3	Every three months 4	Other (Specify)
D23	What is the purpose of PHC trainer's visits? **Do not read options** **More than one option allowed**	Conduct in-service training 1	Assess skills 2	Conduct skills training 3	Provide clinical support 4	Other (Specify)
D24	What suggestions would you make to improve PHC trainers visits?					

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

E. DOCTORS' VISITS

E1	Does this clinic have doctors' visits? *If no, skip to E12*				Yes 1	No 2
E2	Is there a current roster of doctors' visits? (observe)				Yes 1	No 2
E3	How often do doctors visit the facility?		Once a week 1	Fortnightly 2	Once a month 3	Other (Specify)
E4	What is the purpose of doctors' visits? *More than one option allowed*	Review patients' chronic medication 1	Attend to referred patients 2	Conduct daily patient consults 3	Train clinic staff 4	Other (Specify)
E5	Average time spent at facility by doctors per visit		Hours............ Minutes.........			
E6	Number of times doctor were scheduled to visit in March, April & May 2007		March 07	April 07	May 07	
E7	Number of times that doctors missed visits in March, April & May 2007		March 07	April 07	May 07	
E8	In general, are you informed if the doctor is to miss a visit?		Does not miss visits -3	Yes 1	No 2	
E9	What is/ are most common reason (s) for doctors missing clinic visits?		Lack of transport 1	Other hospital commitments 2	Off sick 3	
				Other (Specify)		
E10	Do visiting doctors give clinical support and advice? (that is, discuss clinical cases with the staff)		Never 1	Sometimes 2	Always 3	
E11	How would you rate doctors' visits *Only one allowed*		Very Helpful 1	Helpful 2	Not helpful at all 3	
Other professional staff visits						
E12	Which other professional staff come on visits to see patients? *Do not read out More than one option allowed*	Physio-Therapist 1	Occu-pational therapist 2	Dietician 3	Dentist 4	None 5	Other (Specify)
E13	Which of these professionals, if any, undertake any teaching of the clinic staff? *More than one option allowed*	Physio-Therapist 1	Occu-pational therapist 2	Dietician 3	Dentist 4	None 5	Other (Specify)

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

F. CLINIC STAFF RELATIONS WITH COMMUNITY HEALTH WORKERS

F1	How many Community health workers are working in this clinic's catchment area? **Observe register, if available**				
F2	Does the clinic have a record of CHW activities? *Observe itinerary/ job description/ reports*			Yes 1	No 2
F3	Who is responsible for supervision of Community Health Workers?	Clinic manager 1	Community Health Facilitator 2	NGO (Specify)	
		Other (Specify)			

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

G. SHARED CARE

<table>
<tr><td colspan="5" align="center">TB
<i>These questions may be asked of the PN who deals with TB patients</i></td></tr>
<tr><td>G1.1</td><td colspan="2">If you suspect TB do you send sputum samples from the clinic?

If no, skip to G1.4</td><td align="center">Yes
1</td><td align="center">No
2</td></tr>
<tr><td>G1.2</td><td colspan="2">How long does it take to get the results?</td><td colspan="2">Weeks ………   Days ………..</td></tr>
<tr><td>G1.3</td><td colspan="4">If the sputum comes back positive to the clinic, what is the process whereby TB treatment is started?</td></tr>
<tr><td>G1.4</td><td colspan="4">If the patient is diagnosed at the hospital with TB, how do you know that the patient will be coming to the clinic for continued treatment?</td></tr>
<tr><td>G1.5a</td><td colspan="4">How do you identify TB patients who fail to attend for treatment after being transferred by the hospital to the clinic?</td></tr>
<tr><td>G1.5b</td><td colspan="4">How do you identify TB patients who do not return to the clinic for treatment once they have started treatment at the clinic?</td></tr>
<tr><td>G1.6</td><td colspan="4">What action is taken? (Prompt – do they go to the home of the patient?)</td></tr>
<tr><td>G1.7</td><td colspan="2">How often are TB patients who default traced to their homes?
If not followed up, skip to G1.9</td><td align="center">Always
1</td><td align="center">Sometimes
2</td><td align="center">Not followed up
3</td></tr>
<tr><td rowspan="2">G1.8</td><td colspan="2" rowspan="2">If yes, who does follow-up of defaulted patients?</td><td align="center">Clinic staff
1</td><td align="center">CHW's
2</td><td align="center">Trained DOTs supporter
3</td></tr>
<tr><td colspan="3" align="center">Other (Specify)</td></tr>
<tr><td>G1.9</td><td colspan="2">Does this clinic send sputum samples after two months of TB treatment?

If no, skip to G1.11</td><td align="center">Yes
1</td><td align="center">No
2</td></tr>
<tr><td>G1.10</td><td colspan="4">If the patient has a positive sputum at two months what action is taken?</td></tr>
<tr><td>G1.11</td><td colspan="2">How would you rate the support that you get from the hospital if you need advice regarding a TB patient?</td><td align="center">Very Helpful
1</td><td align="center">Helpful
2</td><td align="center">Not helpful at all
3</td></tr>
</table>

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

<table>
<tr><td colspan="6" align="center">HYPERTENSION</td></tr>
<tr>
<td>G2.1</td>
<td>If a client with hypertension is poorly controlled, what action is taken?</td>
<td align="center">Client sent back to hospital

1</td>
<td align="center">Telephone advice obtained from hospital
2</td>
<td align="center">Seen by the visiting doctor

3</td>
<td align="center">Other (Specify)</td>
</tr>
<tr><td colspan="6" align="center">ANTI-RETROVIRAL THERAPY
<i>These questions may be asked of the PN who deals with ARV patients</i></td></tr>
<tr>
<td>G3.1</td>
<td colspan="3">Does this clinic take blood for CD4 counts?

If no, skip to G3.3</td>
<td align="center">Yes
1</td>
<td align="center">No
2</td>
</tr>
<tr>
<td>G3.2</td>
<td colspan="2">If yes, what is the turnaround time for a CD4 count?</td>
<td colspan="3" align="center">Weeks ………   Days ………..</td>
</tr>
<tr>
<td>G3.3</td>
<td colspan="3">Does this clinic do ARV treatment literacy training?</td>
<td align="center">Yes
1</td>
<td align="center">No
2</td>
</tr>
<tr>
<td>G3.4</td>
<td colspan="3">Are patients on ARV's followed up in this clinic?

If no, skip to section H</td>
<td align="center">Yes
1</td>
<td align="center">No
2</td>
</tr>
<tr>
<td>G3.5</td>
<td colspan="5">How do you identify patients who fail to come for their ARV treatment?</td>
</tr>
<tr>
<td>G3.6</td>
<td colspan="5">What action is taken when patients fail to come for their ARV treatment?</td>
</tr>
</table>

FORM 1: FACILITY REVIEW

A1	Clinic name		A2	Clinic code	

H. AVAILABLE GUIDELINES & RECORDS

	Guidelines / Record	(a) Available		(b) If available, developed by:			(c) Year
H1	Referral guidelines	Yes 1	No 2	Local 1	Provincial 2	National 3	
H2	Obstetric referral guidelines	Yes 1	No 2	Local 1	Provincial 2	National 3	
H3	Doctors' visits guidelines	Yes 1	No 2	Local 1	Provincial 2	National 3	
H4	Supervisory visits guidelines	Yes 1	No 2	Local 1	Provincial 2	National 3	
H5	Referral / Ambulance response register	Yes 1	No 2	Local 1	Provincial 2	National 3	
H6	Records / Itinerary for CHW (schedule of visits)	Yes 1	No 2	Local 1	Provincial 2	National 3	
H7	TB Management Protocol/ Guidelines	Yes 1	No 2	Local 1	Provincial 2	National 3	
H8.1	PMTCT guidelines	Yes 1	No 2	Local 1	Provincial 2	National 3	
H8.2	HIV counseling guidelines	Yes 1	No 2	Local 1	Provincial 2	National 3	
H8.3	Management of HIV children	Yes 1	No 2	Local 1	Provincial 2	National 3	
H8.4	Management of HIV adult	Yes 1	No 2	Local 1	Provincial 2	National 3	
H9	Essential Drug List (EDL) / (PHC Green Book)	Yes 1	No 2	Local 1	Provincial 2	National 3	
H10	Standardized referral letter	Yes 1	No 2	Local 1	Provincial 2	National 3	
H11	Other (Specify)			Local 1	Provincial 2	National 3	
H12	Other (Specify)			Local 1	Provincial 2	National 3	

*** Tool Adapted from RHRU National STI Baseline Survey In-depth Facility Review tool**

FORM 2: PROFESSIONAL NURSES TRAINING

A1	Clinic name		A2	Clinic code	
A3	Date **DD/MM/YYYY**		A4	Data collector	

PN initials:		1. Years of experience as a professional nurse?			
Have you completed any of the following diplomas?					
2. PHC diploma	Yes 1	No 2	b) Duration:		c) Year:
3. Advanced midwifery	Yes 1	No 2	b) Duration:		c) Year:
4. Paediatric nursing	Yes 1	No 2	b) Duration:		c) Year:
What short courses have you attended?					
5. AIDS counseling	Yes 1	No 2	b) Duration:		c) Year:
6. Breastfeeding counseling – not part of IMCI	Yes 1	No 2	b) Duration:		c) Year:
7. Dispensing	Yes 1	No 2	b) Duration:		c) Year:
8. Essential Drug List / Standard Treatment Guidelines (EDL/STG's)	Yes 1	No 2	b) Duration:		c) Year:
9. Expanded programme of immunization (EPI	Yes 1	No 2	b) Duration:		c) Year:
10.) Family planning	Yes 1	No 2	b) Duration:		c) Year:
11. HIV & infant feeding - not part of PMTCT	Yes 1	No 2	b) Duration:		c) Year:
12. HIV management/ ARV's	Yes 1	No 2	b) Duration:		c) Year:
13. Integrated management of childhood illness (IMCI)	Yes 1	No 2	b) Duration:		c) Year:
14. Prevention of mother to child transmission (PMTCT)	Yes 1	No 2	b) Duration:		c) Year:
15. Sexually transmitted infections (STI)	Yes 1	No 2	b) Duration:		c) Year:
16. TB	Yes 1	No 2	b) Duration:		c) Year:
17. Other (Specify)			b) Duration:		c) Year:

FORM 2: PROFESSIONAL NURSES TRAINING

A1	Clinic name		A2	Clinic code	
A3	Date **DD/MM/YYYY**		A4	Data collector	

	Do you have a copy in your consulting room of the following?			
18	**IMCI chart booklet**	Not IMCI trained -3	Yes 1	No 2
19	**EDL green book**		Yes 1	No 2

FORM 3: REFERRAL SYSTEM NUMBERS

A1	Clinic name		A2	Clinic code	
A3	Date	*DD/MM/YYYY*	A4	Data collector	

Please complete every block. Record zero, if there were no referrals or letters for that months.
If there is no record available, please write no record.

		March 07	April 07	May 07
C1	Total number of patients seen in March, April & May 2007 **check client register / Monthly data**			
C2	Total number of patients referred (urgent and non-urgent) to district hospital in March, April & May 2007 **check client register, transfer register or any available record**			
C3	Number of urgent referrals in March, April & May 2007 **check client register, transfer register/ ambulance response register or any available record**			
C4	Number of times the ambulance was called in March, April & May 2007			
C5	Number of urgent referrals collected by an ambulance within 1 hour in March, April & May 2007 **check available record or ambulance response register**			
C5a	Total number of referral letters in March, April & May 2007			
C5b	Total number of feedback letters in March, April & May 2007			

Key statistics		
C5c	What was the TB treatment interruption (default) rate in the last quarter?	
C5d	What was the immunization drop-out rate in the last quarter	

FORM 4: PATIENT REFERRAL LETTER CHECKLIST

A1	Clinic name		A2	Clinic code	
A3	Date	*DD/MM/YYYY*	A4	Data collector	

Letter 1

* Note if the following appear on the referral letter:

	Patient Details						
1.1	**Surname**	*1= Yes*	*2 = No*	1.2	**First Name(s)**	*1= Yes*	*2 = No*
1.3	**Physical address**	*1= Yes*	*2 = No*	1.4	**ID Number**	*1= Yes*	*2 = No*
1.5	**Age**	*1= Yes*	*2 = No*	1.6	**Sex/ Gender**	*1= Yes*	*2 = No*
	Referring Institution Details						
2.1	**Clinic Name (Institution)**	*1= Yes*	*2 = No*	2.2	**Tel Number**	*1= Yes*	*2 = No*
2.3	**Fax Number**	*1= Yes*	*2 = No*	2.4	**Name of Referring Practitioner**	*1= Yes*	*2 = No*
2.5	**Date of Referral**	*1= Yes*	*2 = No*	2.6	**Standardized letter**	*1= Yes*	*2 = No*

* Transcribe details from Section 2.2 & 2.3 (Referral letter) or The Text of the letter

3. Reasons for Referral:

_____
_____
_____
_____
_____
_____

4. Current Management:

_____
_____
_____
_____
_____
_____
_____

If not a standard letter, transcribe text here

FORM 5: FEEDBACK LETTER CHECKLIST

A1	Clinic name		A2	Clinic code	
A3	Date	DD/MM/YYYY	A4	Data collector	

Feedback Letter 1

* Note if the following appear on the Feedback section of Referral letter:

Institution	1= Yes	2 = No	Telephone No	1= Yes	2 = No
Fax No	1= Yes	2 = No	Patient No	1= Yes	2 = No
Name	1= Yes	2 = No	Department	1= Yes	2 = No
Date	1= Yes	2 = No	Date	1= Yes	2 = No

* Transcribe details from Section 3.2 & 3.3 (Feedback section) or The Text of the letter

Patient to be seen again at referral institution	1= Yes	2 = No
Date of next visit	1= Yes	2 = No

Referral & Support Baseline

1

APPENDIX C

Annexure of conditions

Annexure

Reason for referral

	Frequency	Percent	Valid Percent	Cumulative Percent
Cough, SOB, TB, chest pain	62	17.2	17.2	17.2
Injury - general, other	38	10.6	10.6	27.8
Diarrhoea, vomiting, abdominal pain	24	6.7	6.7	34.4
Pelvic bleeding and abdominal pain	20	5.6	5.6	40.0
Eyes, ears	16	4.4	4.4	44.4
Pregnant >20/40	15	4.2	4.2	48.6
STI, dysmia, PVD, haema	14	3.9	3.9	52.5
Chronics, HT or diabetes	14	3.9	3.9	56.4
Abscess, lumps and lesions	12	3.3	3.3	59.7
Micellaneous, others	12	3.3	3.3	63.1
Illegible	11	3.1	3.1	66.1
Injury - open wound	10	2.8	2.8	68.9
HIV	10	2.8	2.8	71.7
CVA, weakness, dizziness, fainting, fits	10	2.8	2.8	74.4
Abdominal pain - male or gender not certain	9	2.5	2.5	76.9
Paeds general	9	2.5	2.5	79.4
Injury - dog bite, snake bite	8	2.2	2.2	81.7
Abdominal pain, vomiting, without PVB	8	2.2	2.2	83.9
Psychiatric review	8	2.2	2.2	86.1
Headache	7	1.9	1.9	88.1
Head injury	6	1.7	1.7	89.7
Vomiting alone	6	1.7	1.7	91.4
Unable to categorise	6	1.7	1.7	93.1
Termination of pregnancy	5	1.4	1.4	94.4
Skin problems, rash, cellulitis	5	1.4	1.4	95.8
Jaundice	4	1.1	1.1	96.9
Joint pains, swelling, trauma	4	1.1	1.1	98.1
Post op complications, management	4	1.1	1.1	99.2
Dental	2	.6	.6	99.7
Injury - burns	1	.3	.3	100.0
Total	360	100.0	100.0	

Number of letters found in each clinic – only one clinic had 10 feedback letters