ESTABLISHMENT OF WEB BASED DATABASE IN DEVELOPING COUNTRIES HOSPITALS.

CASE STUDY: CHIMALA MISSION HOSPITAL, TANZANIA.

BY

SOPHIA A. MAMUYA

BIT/12571/61/DF

A RESEARCH PROJECT FOR THE PARTIAL FULLFILMENT FOR THE AWARD OF A DEGREE OF INFORMATION TECHNOLOGY, KAMAPALA INTERNATIONAL UNIVERSITY

JUNE, 2009

DECLARATION

I **Sophie A. Mamuya** declare that this work has been researched and completed by me and has never been submitted wholly or partially for any other award before.

Signature: ..... **Date:** 25th/06/2009

SOPHIA A. MAMUYA

APPROVAL

This work has been prepared and moderated through profound commitment of the supervisor and the student and has been submitted for examination with my approval as the supervisor.

Signature: ..... **Date.** 30 June, 2009

ESTHER WABULE MAKAI

SUPERVISOR

ACKNOWLEDGEMENT

In the three years it has taken to pursue my degree and then it this research, special people have given generously to their time and support. Firstly I thank God almighty for everything he has done for me and always will. My gratitude is deeply felt. To my loving mother for her encouragement and faith in me through the years if it wasn't for her I could never have succeeded through my studies.

I'm indebted to my supervisor and lecturer, Miss Esther Wabule who guided my project in its infancy and immediately offered her interests and guidance.

My best friend phoebe every time she gave me a shoulder and reminded me to stay focused and through the discussions and a good friendship through the years.
My brothers Fahmy, Adam and my sister chellynce.

DEDICATION.

To my mum and dad for being the best parents in the world.

ABSTRACT

This project is a result of many outstanding questions, arising from practical experiences as far as proper management of data and making it useful is concerned. Developing countries hospital have a hard time in using file based systems, redundancies, file searching takes much time. New invented techniques and methods everyday and cant share with the world.

Chimala mission hospital was chosen as focus of the study. The research was cross sectional, descriptive and analytical survey designed to show the establishment of web based database in developing countries `hospitals and the role it plays in Tanzania. Samples of respondents were drawn from chimala mission hospital, Mbarali district, in addition to information expect to be generated from discussion, observations and interviews with the medical staff and patients.

Result of the study to Chimala cancer, diabetes and asthma killing any one is history leave alone malaria. Lot of volunteers and well educated specialists approved the traditional medicine. And that if it wasn't for financial and technological reasons like taking advantages of the internet, chimala could be an indispensable hospital in the world. People were kind; they appreciated how lives had been changed by that one mission hospital that ever since contributing to the hospital has been an interesting challenge. A good website could take its services to another level.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

This chapter discussed the background to the study, background to the case study, statement of the problem, purpose of the study, objective of the study the general objective and the specific objectives, research questions, scope of the study the geographical scope and the content scope the significance of the study and the conceptual frame work.

1.1 BACKGROUND TO THE STUDY

In this computer or say internet age web services, a DBMS are extremely beneficial to healthcare provider. They enable access to vast amounts of data, control redundancies, control concurrent anomalies, provide good security, rapid gathering of that information and online professional training. Success of any organization depends on it ability to properly manage it data with a good security and making it absolutely useful. A web based database can do all of the above more yet, facilitates the development of interactive features such as guest books, *forms,* images, a good interface and processes such as online diseases management, consultation through real time video system and automatic checks of possible medication error. The delivery of healthcare has slowly started

entering the virtual world of the Internet. Healthcare today is an information science, where more and more data on patients is being created and collected. It stands to reason that if this data is not transformed into information then a wonderful opportunity has been lost to move healthcare delivery onto a new level Kenneay C.Kirwan J. Cook Cetal. (2000).

Around the world, costs of health care are going up but IT and telecom costs are dropping. Governments are also coming -under increasing pressure to cut costs, make their services economically affordable, and privatize like sectors more telecommunications and healthcare. "The challenge in web based data base in relation to telemedicine systems is to harness new technologies and operating mod is while also improving equity in access to high-quality healthcare."

Tanzania National Telemedicine strategy seeks to integrate the healthcare system by connecting and giving support to remote and rural medical centers of Tanzania and most importantly, strengthening the referral system. Telemedicine is defined as the use of telecommunication technologies such as the Internet to deliver medical information and services to locations at a distance from the care giver or educator. A web based database is a website with a connection to a database system that's a high complex and sophisticated software used to build, maintain and control and allow a systematic approach to the storage and retrieval of data in a computer It is for this reason therefore that has prompted the researcher to investigate the effect of web based database on developing countries hospitals with specific focus on its establishment in Chimala Mission

Hospital. Web based database services are extremely beneficial to healthcare provider. They enable access to vast amounts of data, control redundancies, control concurrent anomalies, provide good security, rapid gathering of that information and online professional training. A web based database facilitates the development of interactive features such as guest books, forms, images, a good interface and processes such as online diseases management, consultation through real time video system and automatic checks of possible medication errors. While more and more developing countries hospitals are accessing web base database services, few are taking advantage of these new or what the researcher characterize as "transformational" capacities.

1.2 BACKGROUND TO THE CASE STUDY

In late 1961 Tanzania emerged from several centuries of European domination and gained independence for their people. Several years after independence the nation decide to rid itself of any international influence in order to promote their culture, way of life and so to unite as one. At that time many privately owned organizations, hospitals, arms and industries were taken over by the government and foreigners within the country were told or allowed to leave. Meanwhile, the missionaries were more than welcome to remain in the country if they would assist in the development of the country.

Due to this, it was decided in the mid 1960's to build Chimala Mission Hospital in order to protect the young Christians providing them with the freedom to worship

and to continue to spread the faith. The hospital started as a small clinic, in a small building. Since then it has grown from that shack to a 230 beds hospital, with a medical staff of 90 people and several volunteers. The hospital continues to grow and serve 400,000 people who live in the Usangu plains and the southern Highlands and many other people in Tanzania at large.

Chimala mission hospital is the leading medical center in Mbeya region of Tanzania. It is considered the "District Hospital", even though that title does belong to a small government health facility 30 miles northeast of Chimala mission. Within the hospital there are several specialty clinics such as: Maternal Health clinic, HIV/AIDS clinics, infectious Disease clinic, and out-patient clinic. Traveling clinic, most of the illnesses treated at Chimala mission are tropical in nature, such as malaria, typhoid, tropical ulcers, and cholera, a lot of burns and broken limbs. However, Chimala is one of the leading hospitals in Africa with traditional medicine, treating mostly cancer, diabetes and asthma.

1.3 STATEMENT OF THE PROBLEM

The delivery of healthcare has slowly started moving out of the traditional realm of consulting room or healthcare facility and files systems, and has started entering the virtual world of the Internet and DBMS. Healthcare today is an information science, where more and more data on patients is being created and collected. It stands to reason that if this data is not transformed into information then a wonderful opportunity has been first to move healthcare delivery onto a new level. Listening, examining and diagnosing must be followed by the

explanation and treatment of the disease. It is precisely the latter half of this role that will be open to transformation. With the endless amount of information available online, healthcare providers are unable to pass all the available information on to their patients. The result is that the initial provider of care is not necessarily the only source of information being used by the patient.

Power of the web based database is in the broad range of processes that it makes possible and that could not have been previously envisioned. These would enable passing traditional medicine inventories, online training for healthcare practitioners; provide access to more data for diagnosis and improve operating efficiencies. Transmission of complex medical images and videos to specialists in hospitals located in other areas for consultation and diagnosis enable and support the formation of a good communication between developing countries hospitals and among local hospitals leading to better treatment of patients through knowledge sharing.

1.4 PURPOSE OF THE STUDY

The purpose of the study was to establish a web based database in developing countries hospitals with regard to Chimala mission hospital in Tanzania. A web based database is indispensable to any hospital to properly manage enormous amounts of data with very good security and making it useful to others.

1.5 OBJECTIVE OF THE STUDY

1.5.1 GENERAL OBJECTIVE

The study generally examined the roles and establishment of web based database on developing countries hospitals. A web based database is indispensable to a hospital. To provide access and security to enormous amounts of data and making it useful to other people.

1.5.2 SPECIFIC OBJECTIVE

1. To identify the roles of web based database in developing countries hospitals.
2. To identify the challenges faced by Chimala mission hospital in proper data management and internationally provision of health care.
3. To suggest ways of improving web based database in developing countries hospitals
4. To establish a web site for chimala hospital and connect it to a data base for Chimala Hospital

1.6 RESEARCH QUESTIONS

1. What are the roles of web based database in developing countries hospitals?
2. What are the challenges faced by Chimala Mission hospitals in proper data management and internationally provision of health care?

3. What are the ways of improving web based database in developing countries hospitals?
4. How to properly establish a good web based data base for developing countries hospital in regards to Chimala.

1.7 SCOPE OF THE STUDY

1.7.1 GEOGRAPHICAL SCOPE

There are number of ways that web based database expenses might be reduced. Competition in the ISP market could help to lower prices but competition alone will not be sufficient to dramatically force down prices if ISPs can not also provide their own infrastructure. Nationwide internet access for the price of a local call could also be implemented as has been done in a number of African countries. However, the researcher will base her study on web based database on developing countries hospitals at chimala Mission Hospital which is a Christian hospital located at Chimala village, Mbarali district, Mbeya region, Tanzania, east Africa, each year more than 50,000 patients pass through its doors. The study focused on the medical staff, patients and information technology departments and ranged within a period of 6 months. It was equally aimed at gender sensitivity in the selection of respondents to ensure that both men and women participate equally.

1.7.2 CONTENT SCOPE

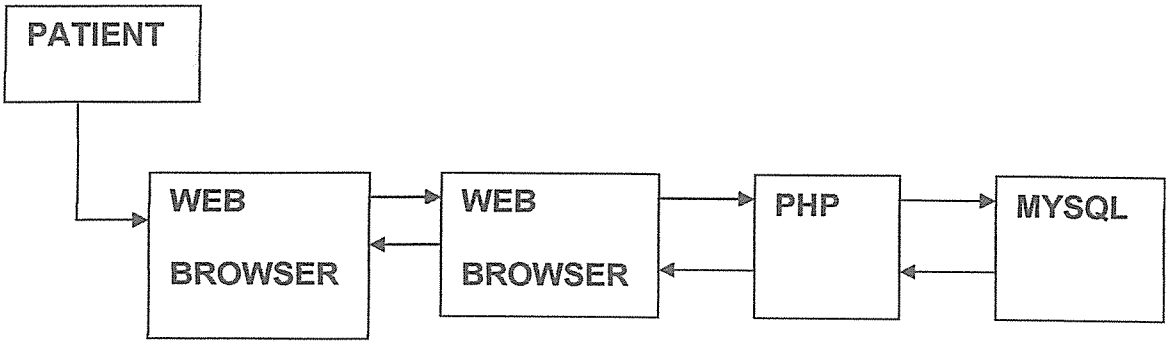
Content scope dwelt on the history of the internet, how hospitals should be using the web based database, web based database challenges' in Africa, web based data in developing countries hospitals, tele-medicine governance, Medical Literature and Data, Telemedicine to benefit developing- community, Challenges facing web based database and the contribution to the academic career of the researcher. In relation to Telemedicine. The study also accessed how web based data base will benefit rural community.

1.8 SIGNIFICANCE OF THE STUDY

The mission hospital adopts tele-medicine through a web based database in the research findings will help developing hospitals especially Chimala improving healthcare

1. The result of the study will be useful to future researchers who might be interested in a related field
2. There is no doubt the result will contribute to the existing theories on the establishment of web based database in developing countries hospitals.
3. There is a greater hope also that the study will be a source of great experience

1.9 CONCEPTUAL FRAME WORK



•A patient makes a request using hyper transfer protocol (HTTP) request for a particular web page.

•The web sever receives request. It retrieves the files and passes it to the PHP for processing.

•The PHP engine begins processing the scripts, inside the script is the command to connect to the database and execute.

• PHP opens the connections to the MYSQL sever and sends on the appropriate query.

CHAPTER TWO

LITERATURE REVIEW

2.0 INTRODUCTION

This chapter presented a review of literature relating to the variables under investigation it presented the theoretical Orientation of the study and related literature. The related literature was presented with objectives of the study and Cited to suit functionalism of web based database in general and chimala as a hospital in developing countries Hospitals in particular. The researcher was to make a number of links that arose from the literature.

2.1 HISTORY OF THE INTERNET

Before wind spread internetworking that led to the internet, most communication networks were limited by their Nature to allow communications between stations on Network and prevalent networking method was based on central Mainframe computer model. Several research programs began to explore and articulate principles of networking between separate physical networks, leading to the development of the packet switching model of digital networking. David Roessner, et. Al (1997).

The term "internet" was adopted in the first RFC published on the TCP protocol (RFC 675, internet trans mission control program, December 1974). It was around the time when ARPANET was interlinked with NSFNet, that the term

internet came into more general use. With "an internet" meaning any network using TCP/IP. "The internet" came to mean a global and .large network using TCPIIP. J.C.R. Licklider (1960)

2.2 THE NEED OF A HOSPITAL TO HAVE A WEB BASED DATABASE

This lapse in thinking about how hospitals c n use the web based database is most unfortunate. Wedded to advances in enterprise computing, network computing

Applications have the potential for markedly improving hospital customer services, as

Well markedly reducing hospital clerical and administrative expenses, a topic of vital

Concern to boards and senior management in this exceptionally harsh and unforgiving economic climate.

Kennedy C. Kirwan J. Cook C et.al (2000)

To the extent that medicine through Web Pages uses is driven by a focused patient/family search for disease-specific solutions. No hospital is going to add much value by it self. The knowledge domain in which these solutions reside is national, even international. No hospital owns enough proprietary knowledge to make much difference by itself. Simply repackaging commercially available knowledge under the hospital's mark *does* nothing meaningful to bolster the hospitals reputation or add measurable consumer value. However progressive

hospitals realize that what the web based database represent is a fundamental shift in power towards patient/families and away from institutions or Professionals. Assisting in this shift is power to counterintuitive thrust of an effective Hospital web based database strategy. The highest and best use of web based Database is not to market the hospital but to make the use of the hospital easier and More transparent to patients. Hospital executive should view web based database as a rich and diverse toolbox for restricting their relationship to their patients and reducing the cost of resolving their health problems. Equally important the web based database may help replace brick and mortal-based administrative and clinical processes (and attendant clerical costs) with electronic processes that more responsive and transparent to their users. Kennedy C.KilWan J. Cook C et al. (2000)

Internet connectivity enables networked providers to populate their personal records with all encounter information generated by patient visits to their physicians, the hospital and its related services. In turn at the patient or family's direction, this record sent (along with related insurance information) to any future site of care in sponsoring health system to help mainframe the impending clinical encounter. This electronic record can also be backed up onto a smart card people can keep with them and be read by other providers. The most obvious potential patient application will enable mothers *to* aggregate and control personal health information of their children. Mars M, Dolva N. (2008)

Multiple legacy information systems require supplying the same information over

and Over again. Database management system can fix this problem where data is entered once. Hospitals can give their patients an internet accessible dashboard that enables the family *to* control its relationship to and use health system through a personal webpage which enables family to connect to the hospital clinic, the ER and other physicians and care givers electronically, as well as schedule appointments. Supply medical and financial information, and receive logistical information related to the clinical encounter, and structured feedback, including test results, patient education information and disease management program content. Mars M.Dlova N. (2008)

Linked to the hospital financial systems, a web based database can allow patients and families to track their bills and insurance claims that result from medical encounter, and even pay the patient portion of the encounters cost electronically. The personal web pages can of course be customized to provide patient or family specific health information. Or the links to trusted sources. Supplying this access in HIPAA-complaint manner that safeguards privacy and the security of transmitted medical information is complex, intractably, so Building the interfaces from the personal webpage to all these diverse sources of patient's information and points of access in the hospital and medical staff is enormous technical and political challenge. One cannot simply lay a web browser on top of the existing departmental infrastructure (typical with multiple legacy IT systems, supported by incompatible software on multiple machine' platforms) and expected integrated consumer functions magically to appear. To make this happen will require not only patience and funding, but also a partnership between

vendors and the hospital's IT staff and the departmental managers and doctors who control its administrative systems. Further. A data base is the best way for data management. It allows storing a vast amount of information securely and controls concurrent access anomalies. A web based database will supplement not replace the existing telephone and file based management system. This strongly implies that cost saving from discontinuing use of existing paper and telephone-based scheduling and billing systems will probably not materialize for many years. Some clinical services, notably laboratory and radiology interpretation are also amenable to support through network computing applications. As radiological images and pathology slides become digitalized, the images can be moved literally anywhere (in the world) for interpretation. Given sufficient band width, data security and interactivity with the clinical decision makers who require the interpretations.

Liberated from the traditional constraints of hospital operating budgets, these firms will seek to grow through local and regional contracts with hospitals or systems that have historically competed clinically but will find economic advantage from collaborating to reduce administrative services. These services will be particularly helpful to smaller hospitals that can not afford large in house administrative operations. Larger firms, such as traditional IT consultants and product companies such as imaging equipment and service firms, supply and distribution firms, and enterprise software companies, can also be expected to be major players in this emerging market.

2.3 WEB BASED DATABASE CHALLENGES IN AFRICA

A major constraint to internet access in Africa is high costs. Average African internet Service provider (ISP) prices of US$50 are close to a monthly salary for many Subscribers. This figure does not include telephone usage charges for dial-up access that can often exceed the ISP operating costs. The average ISP in Africa pays proportionally more for telecommunications than ISPs in other regions Gulube SM. Wynchank S (2001)

This is due to limited infrastructure in the region, restricted competition, limitations on ISP activities, high license fees, the lack of national and regional traffic exchange points, and the high cost of international connectivity. Reasons for the high cost of international band width include having to pay full circuit costs. ISPs not able to provide own direct connectivity and lack of transparent pricing from international bandwidth suppliers. Researches have proven that a number of developing countries are still stuck behind using file management systems. Data is never secured, it's full of redundancies and cost a lot of time going through files that are never found in most cases organizations keep dropping down a blind alley. There are a number of ways that data management expenses might be reduced. DBMS mare in low prices, more over they save time and avoid redundancies. Data is secured and could further more be stored in backups. File system has been taken over by DBMS a long time ago and any organization that isn't aware of this is a million steps behind the millennium. Chetty M.Tucker W, Blake E. (2008).

African countries could also collaborate to present a united front at forums for

promoting more equitable international circuit cost sharing. The growth and sustainability of electronic networks in Africa is dependent on the continent becoming more involved with regional and international internet-"related organizations. These include global groups such as the Internet Corporation for Assigned Names and Numbers (ICANN) and the Internet society as well as nascent regional groups such as the Africa Internet Registry-African Network Information Center (AfricNIC) and African Network operators' Group (AFNOG). The development of regional Internet organizations could help to reduce problems such as "hijacked" domain names and foreign control of IP addresses. Jithoo R.Govender PV.Corr P.Nathoo N. (2003)

Governments should boost the education level through the development of citizen Helpful applications such as short computer courses and increase number of computer Studies University; computers are becoming the world basic building block in all types of organizations. Agricultural market information, environment monitoring, education and health software. Developing countries are a little bit way behind when it comes to computer science. It's about time developing nations take computer education to another level. Jithoo R, Govender PV, Nathoo N (2003)

2.4 TELE-MEDICINE GOVERNANCE

The department of Health is drafting a Telemedicine Act that will address matters such as licensure, consent, data security and patients' rights. With the shortage of doctors in Tanzania there is a need for a programmed approach to the issue of

licensure. so that the country can take advantage of international telemedicine services. It is hoped that the Act will be enabling and not restrictive. At the same time the health professionals' Council of Tanzania is drafting ethical guidelines for telemedicine. While these initiatives are well intentioned they may be premature, as there is as yet an insufficient base of physicians and nurses with practical experience in tele-medicine in Tanzania to fully appreciate and debate the implications of some the proposal in the Act. Legislation that may be appropriate for an industrialized country may not be appropriate in a developing country with a shortage of doctors and nurses, and may indeed obstruct the use of telemedicine.

2.5 WEB BASED DATABASE IN DEVELOPING COUNTRIES HOSIPITAL

Developing countries hospitals with web based database. Have new opportunities to improve patient care and create operating efficiencies yet even though telecommunications providers' are increasingly offering these advanced broadband

Services in developing countries, adoption is far from universal. Availability service cost and lack of knowledge of broad band's potential in health care are constraining its utilization by developing countries health care providers. Perhaps more importantly: these constraints are hampering the development of new services such as remote patient monitoring to minimize travel advanced producers like tele-surgery and operational capacities including e-procurement for supplies and online appointment billing and payment information. Gulube

Public Access Internet Service is an excellent way for patients and guests to stay connected in a hospital facility. The delivery of health care has slowly started moving out of the traditional realm of consulting room or healthcare facility and has started entering the virtual world of the internet. Healthcare today is an information science where more and more data on Patients is being created and collected. It stands to reason that if this data is not transformed into information then a wonderful opportunity has been lost to move Healthcare delivery onto a new level. Jithoo R, Govender PV, Corr P, Nathoo N (2003)

The arts of caring and understanding are central to the delivery of care to a patient Listening, examining and diagnosing must be followed by the explanation and treatment of the diseases. It is precisely the latter half of this role that will be open to transformation whether we like it or not. With the endless amount of information available online, healthcare providers are unable to pass all the available information on to the patients. The result is that the initial provider of care is not necessarily the only source of information being used by the patient; Generic E-mail writers could take patient information (demographic and personal details) and clinical data straight out of the patient management system, transferring it to the referral letter. Requests for and results from ancillary medical service. Pathology tests or X-rays could all be managed in the same manner. It is a sphere of patient contact that we in Tanzania have not yet been exposed to. It is not covered in our scope of medico-legal cover and is certainly something to be broached very carefully. It is a type of contact that patients will want to make

in the future, but must occur according to a rigid-set of guidelines. Medical practitioners will be able to make practice information available, private hospitals will be able to promote their different facilities of excellence and medical funders and administrators will be able to advertise their services in an attempt to attract more lives to cover. Once a professional presence has been established, through careful promotion and the subsequent exposure, the internet can be a relatively affordable 24-hours advertisement source.

2.6 DIS ADVANTAGES OF WEB BASED DATABASE IN THE HOSPITALS

If one had to single out a single factor that is critical to the whole movement of Healthcare to an online environment, it would have to be TRUST. The confidentiality surrounding doctor patient interaction must not be allowed to broken merely because transfer of information is occurring electronically. There is currently no legislation anywhere in the world governing how communication between doctors, patients, Pharmacists, hospitals, administrators and pharmaceutical companies should be Practiced. The united states with their HIPAA Act of 1996 regulations are still 1-2 years away from this reality. Tanzanians are similarly a number of years away from specific regulations but we should not be waiting around fro regulations governing the way we know we should be interacting. Gulube SM, Wnychank S. (2001)

Most HIV positive patients, requesting the result of his latest CD4 count from his Physician would want anything *to do* with a web based data base as far as his health situation is concerned, he'll need *to* be assured of the following, and the E-

mail he sent is read by nobody other than the physician he sent it *to.* His lab result information is passed on to nobody but himself. The reply from the physician is not intercepted by anyone before he reads it. Similarly one medico-legal level the physician would need to ensure that, the E-mail is read by patient, the reply to the E-mail he received is read by nobody other than the patient he sent it *to.* Chetty M. Tucker W. Blake E. (2008)

The single greatest hindrance *to* 'users embracing the online healthcare community are slow internet with the ever-increasing availability new technologies like satellite and DSL access. It is hoped that the monopoly Telcom has created and enforced' will not survive for much. Longer, as they are single-handedly stifling development in this arena. Healthcare currently accounts for over 52% of all searches made on line in the USA, and we can expect the same *to* occur in Tanzania. As more and more people gain access *to* the Internet, the healthcare community will become the fastest growing segment of the internet in Tanzania. *Costs* are prohibitive to large portions of our population, but as access and enrolment increases, costs will be driven down. Technology failure the *more* independent one becomes or) this new sector that one is developing the *more* we will rue the day that we don't have a back system available *to* use. .Telecom's lines get dug up by mistake, servers *go* down, and any number of other possibilities can occur. Jithoo R. Govender PV, Corr P, Nathoo N (2003)

2.6.1 TELE-MEDICINE WEB BASED DATABASE TO BENIFT DEVELOPING COMMUNITY

Telemedicine is defined as the use of telecommunication technologies such as

the Internet to deliver medical information and services to locations at a distance from the Care giver or educator. The growing importance of telemedicine was formally recognized during summits like the first World telemedicine symposium fro developing countries, held in Portugal in 1997 by the ITU. This is part of the Tanzania National Telemedicine strategy that seeks to integrate the healthcare system by connecting and giving support to remote' and rural medical centers of Tanzania and internationally at large most importantly, strengthening the referral system. "Telemedicine technology allows' patients to receive comprehensive care at a local clinic or hospital instead of being referred to a tertiary hospital with the appropriate services. This reduced the cost of unnecessary patient transfers. And saves the patient valuable time and expenses when away from work or their family". Professor Tony Mbewu (2007)

2.6.2 A MULTIADISPLINARY APPROACH OF WEB BASED DA TBASE

Around the world, costs of health care are going up but IT and telecom costs are Dropping. Governments are increasing pressure to cut costs, make services more economically affordable and privatize sector like telecommunication and health care "the challenge in web based database systems in relation to tele-medicine is to harness new technologies and operating models while improving equity in access to high-quality healthcare" said Dr Mandil. (1999)

Web based database in relation to Telemedicine systems harness information and Communications technologies in several ways for administration and management of Health care system, transferring and storing of clinical data

surveillance during epidemics, publication and -, search of medical-literature and education and training for healthcare workers, students and individual citizens. Brauchi K, Oberli H:" Hurwitz N et al. (2004)

Theoretically, web based database in relation to telemedicine can provide crucial benefits and savings by reducing the time to travel for doctors, providing faster access to medical expertise (especially during emergencies) using health care resources more effectively and upgrading skills and knowledge fro medical professionals.

2.7 MEDICAL LITERATURE AND DATA.

Though the web is not yet well suited for the kind of broadband real time communications that videoconferencing for remote diagnosis some times calls for, it is geared towards the publishing and search of health care literature and transmission and archival of image data. "The function of information sharing, now expanding in developing countries via internet access, may be most valuable of all telemedicine applications" said Heather Hudson. (2007).

Through full reliability no web-based database may be along way off for the medical sector in many developing countries, email messaging lists and email lists and email based database gateways can come to the rescue "for example reliable email services via the internet have been introduced and used in parts of the health sectors of at least 38 of Africa's 49 countries," according to Dr Mandil

(1999) over 80 percent of telemedicine traffic in the world is over store-and-forward messaging networks, he said

2.8 CHALLENGES FACING WEB BASED DATABASE IN RELATION TO TELE-MEDICINE

Many telemedicine pilot projects have launched around the world, but several have Faced challenges in areas like measuring the clinical and cost *efficacy* of telemedicine and in devising norms and standards for the tools, Languages and quality control mechanism used. Formats for the reportage and documentation *of* telemedicine experiments and mechanisms for guaranteei9ng security of patient data are other key *concern.* In addition *to* infrastructure shortages in developing countries there have been several project assessment challenges as well. Bradshaw. D (2003)

Though Web-based access *to* medical literature has skyrocketed, many experts warm that literature published on the Web needs *to* be carefully checked for authenticity, credibility and copyright conformity. Telemedicine is meant *to* augment not replace traditional practices and channels of medicine. Several doctors tend to feel threatened by such new technology-based approaches. Resolved. Dr. Mandil (1999).

Affordable access to quality healthcare is a fundamental human right, but care needs to be taken to bridge the growing "digital divide" between urban and rural areas, developed and developing countries and English and non-English

speaking nations. Sustainability of telemedicine projects many of which do not go beyond a pilot project stage is a key concern and care needs to be taken to ensure private sector participation in such issues.

CHAPTER THREE

METHODOLOGY

3.0 INTRODUCTION

This chapter highlighted on the research design that was used, area of the study, population of the study, sample selection methods and size, data collection methods validity and reliability, procedures of data collection and analysis methods that were used.

3.1 RESEARCH DESIGN

The research was a cross sectional, descriptive and analytical survey designed to show the establishment of web based database in developing countries hospitals and the role it plays in Tanzania. Samples of respondents were drawn from Chimala Mission Hospital, Mbarali District, in addition to information generated from discussions, observations and interviews with the medical staff and patients.

3.2 AREA OF STUDY

The study was carried out from the departments of Information Technology and Medical. Staff at Chimala mission Hospital, Mbarali district. This was located at the Mbeya region and where many activities took place as regards to web based

data base due to their internet connectivity. Selected heads of Department including the Hospital Directorate was used as a source of information to the study.

3.3THE STUDY POPULATION

The target population was the" Chimala mission Hospital and patients who made a total of thirty (30) respondents. The people dominating this area Multi- ethnic. The heads of the departments were only used as informants on the challenges faced by the Hospital web based database technology this is because they experience an impact on these challenges as heads of sections which critically need most of these challenges being investigated.

Table (1)

Department	No. of Respondents
Patients	14
Medical Staff	9
Hospital Directorate	7
Total	**30**

3.3.1 SELECTION RESPONDENTS

The selection of respondents employed both probability and non probability sampling methodology. Both purposive and convenient sampling methods were

employed. A list of staff in the selected departments was used as a sampling frame. Then stratified sampling was used to ensure that both men and women participate equally. The picking of respondents made sure that the sample was sufficient enough. It is estimated that the survey received a total of seven 7 Hospital Directorate Staff, nine (9) Medical staff, and (14) Patients hen<re making a total of thirty (30) respondents. The expectation was that the sample would justifiably give equal and representative information.

3.3.2 DATA COLLECTION METHODS

Data collection was from two main sources; primary and secondary. Secondary sources which included relevant documents and reports. Primary sources were included and were data collected from selected respondents. Primary data was gathered using the following instruments.

3.3.3 INSTRUMENTS FOR DATA COLLECTION

The Questionnaire

The semi structured questionnaire was the main instrument of the study to be administered to the staff of the selected departments. The questionnaire was deigned according to likert scale to explore key variables of factors affecting service delivery. The researcher prefers to use this method because of its ability to solicit information from respondents within a short time as supported by Gupta (1999). Moreover, respondents are given time' to consult records and sensitive

questions will be truthfully answered (proctor 1997: 40-45). Both open and closed ended questionnaires were administered, this was because close ended questionnaire are easier to analyze since they were an immediate usable form and gain each item is followed by alternative answers. Open ended questions permit a great depth of response. When a respondent is allowed to give a personal response usually reasons fro the response usually reasons for the response give, may be directly or indirectly included. They are simpler to formulate mainly because the researcher does not have to labor to come up with appropriate response categories.

3.3.4 STRUCTURED INTERVIEWS

Interviews were administered to the department's heads at Chimala mission hospital concerning the establishment of web based database in developing countries hospitals.

Structured questionnaires were designed in such a way that mores specific and truthful answers related to challenges faced by firms were got. Interviews were also preferred because according to Amin (2003), they gave an opportunity to probe and obtain detailed information on an issue. Interviews make it possible to obtain data required to meet specific objectives of the study.

Interviews are more flexible than questionnaires because the interviewer adapt to the situation and get as much information as possible.

3.3.5 SECONDARY DATA

Secondary data was collected by reviewing available literatures/publication in relation to the topic. The researcher shall employ the technique to pick information that is available from these reports.

3.3.6 VALIDITY AND RELIABILITY AND REALIBILITY OF INSTRUMENTS

Validity of the questionnaire.

The validity of the questionnaire was established by expert judgment method proposed by Gay (1996). Two experts in the field of research in addition to my supervisor were contacted to judge the materials. The researcher adjusted the materials according to the expert's recommendation.

3.3. 7 DATA PROCESSING ANDE ANALYSIS

Data was collected by use of questionnaire; data was entered into the computer edited, sorted and coded to minimize errors. Then it was then grouped into tables. The collected data were analyzed, interpreted and discussed.

3.3.8 RESEARCH PROCEDURE

The researcher started by obtaining a letter from the Kampala International University to enable her visit Chimala mission Hospital at Mbarali district to inform them formally about the fourth coming study. A list of employees was

obtained from the Human resource department and this was used to make up the sampling frame. Key informants were purposively selected during the administering of the questionnaire.

The research instruments used is designed to capture qualitative data. The questionnaire was administered to 30 respondents. The structured questions therein expected to elicit answers that would enable discernment the establishment of web based database in developing countries hospitals. The open ended questions were expected to capture perception and explanation to eth quantitative aspects.

The interview schedule for 7 key informants is expected to enable narration and free expression of informants and to facilitate deeper probing into the impact of web based database in developing countries' hospitals and other issues not otherwise captured in the other techniques mentioned above. The technique also enables the researcher to learn new information relevant to the study, which had not been incorporated in the design of the instruments.

3.3.9 LIMITATION OF THE STUDY

The limitations included probability of-bias due to the sampling method and data collection due to the possibility that some of the respondents may not consent to participate in the study. Time factor was also of essence due to academic pressure.

CHAPTER FOUR

SYSTEM ANALYSIS, DESIGN AND IMPLEMANTATION

4.0 OVERVIEW

The chapter presented the user interface of the study software as well as the system design, hosting architecture, client server architecture, data flow diagram and conclusion of the section.

4.1 DATA ANALYSIS

	Frequency (f)	Percentage (%)
20-29	8	26.7%
30-39	11	36.7%
40-49	6	20.0%
50-59	2	6.7%
60 and Above	3	10.0%
	30	100%

Table 4. 1: Age of Respondents

The table 4.1 above shows that the majority of respondents were aged 20-29 years whilst the least respondent category was 50-59 years old. These findings indicated a generally young workforce as the majority of respondents were in the age bracket of 20-49 years old.

	Frequency (f)	Percentage (%)
2-4	9	30.0%
5-9	11	36.7%
10 and above	10	33.3%
	30	100%

Table 4. 2: Number of years in hospital

Findings in table 4.2 above show that most respondents had worked for the hospital for between 5-9 years as shown by 36.7% while 33% had worked for 10 years or above. The rest of the respondents had worked for less than 5 years.

	Frequency (f)	Percentage (%)
Health care	28	93.3%
Health education	24	80.0%
Community seminars	22	73.3%

Table 4. 3: Services offered by Chimala

The findings of showed that health care was the principal service at the hospital as shown by 93.3% of respondents while health education and community seminars were also noted. The findings in table 4.4 below point to the show that the greater majority of respondents rated the services of Chimala Hospital as either good or very good. This was shown by 40% who stated the services were very good while 56.7% stated the services were very good. Only 3.3% rated the service fair while no respondents rated the service as poor.

	Frequency (f)	Percentage (%)
Very Good	12	40.0%
Good	17	56.7%
Fair	1	3.3%
Poor	0	0.0%
	30	100%

Table 4. 4: Rating of the Chimala Hospital Services

In the figure 4.1 below, the findings of the study show that though respondents rated the services as generally good, most respondents (60%) had to wait for a long time before they received any services. In comparison only 10% waited for a short time while a further 30% believed they waited for a very long time.

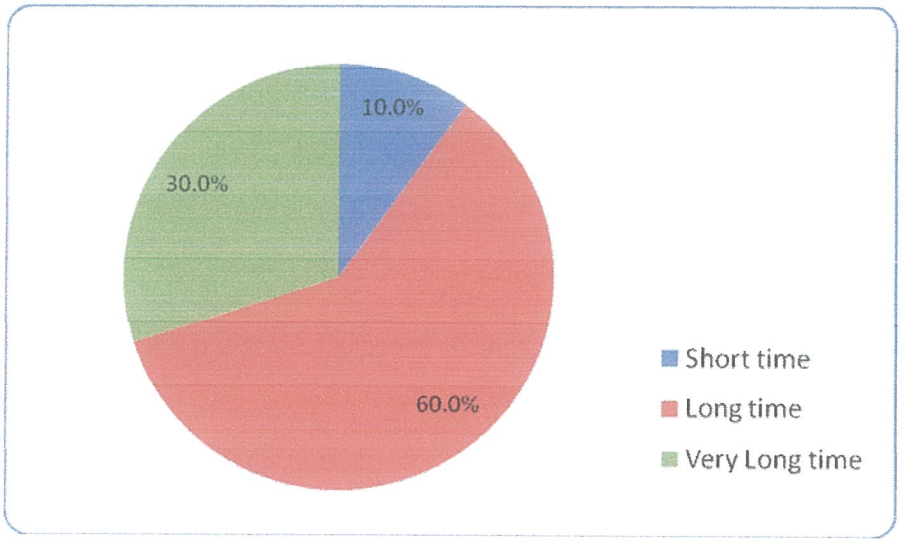


Figure 4.1: Length of time a regular visit to book an appointment, register a file takes

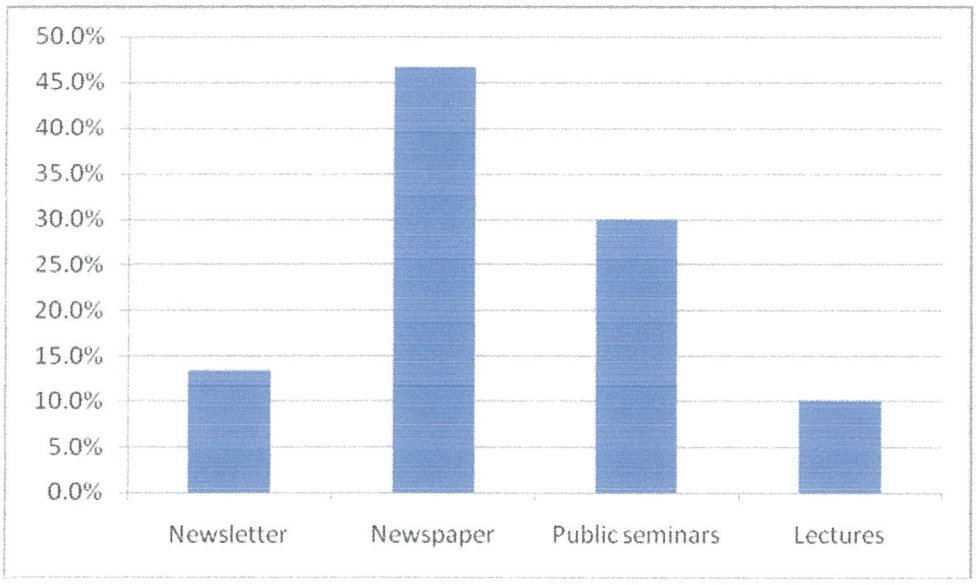


Figure 4.1: Ways in which Chimala Hospital propagates information to make it useful to other people

The findings in figure 4.2 above show that Chimala hospital prop ages most of its information through newspapers as noted by 47%, followed by public seminars (30%), newsletters (14%) and lectures (10%). These findings showed that it was rather expensive for the hospital to disseminate information on a global scale since it is currently only using print publications to distribute the information.

Figure 4.2: Whether the hospital faces problems making data internationally available

The findings in figure 4.3 showed that the majority of respondents also believed that the hospital was facing challenges in distributing the information internationally. This was shown by 90% who stated yes while only 10% said the hospital wasn't facing challenges.

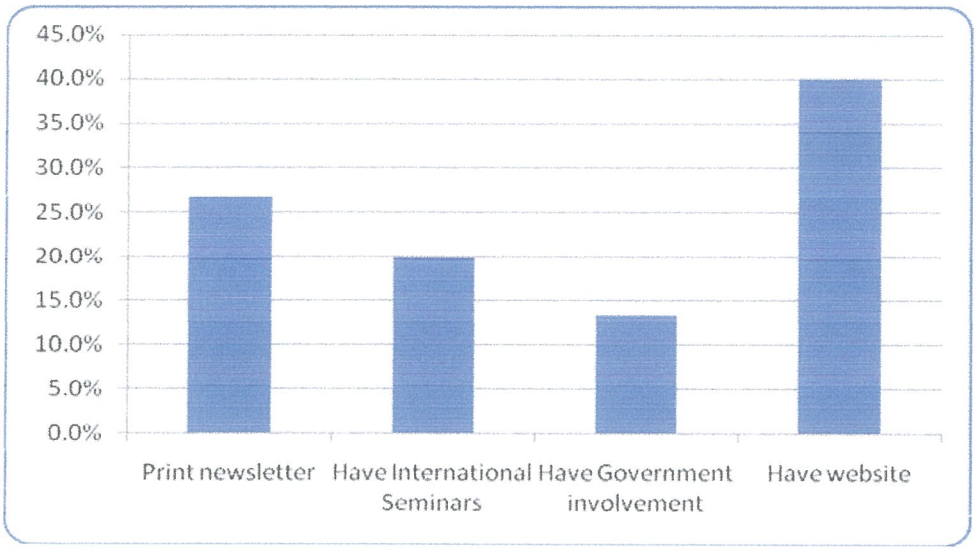


Figure 4.3: Solutions to improve data management to make it usable

The respondents who stated the hospital was facing challenges in its information dissemination mentioned the solutions in figure 4.4 above as potential solutions to the problem of information dissemination of the hospital. Amongst them, the majority of respondents (40%) sited having a website as a solution. This was followed by printing a hospital newsletter (26%), hold international seminars (20%) and getting government involvement.

	Frequency (f)	Percentage (%)
Technology	21	70.0%
Effective management	8	26.7%
Globalization	14	46.7%
Deregulation	6	20.0%
Data management	26	86.7%

Table 4. 5: Factors affecting proper data management and making it internationally usable

The factors affecting proper data management at the hospital to make it international accessible were investigated and the findings showed that data management as sited by 86%, technology as sited by 70% of respondents and globalization as sited by 46.7% of respondents were the major factors. Other factors included lack of effective management and deregulation of the hospital.

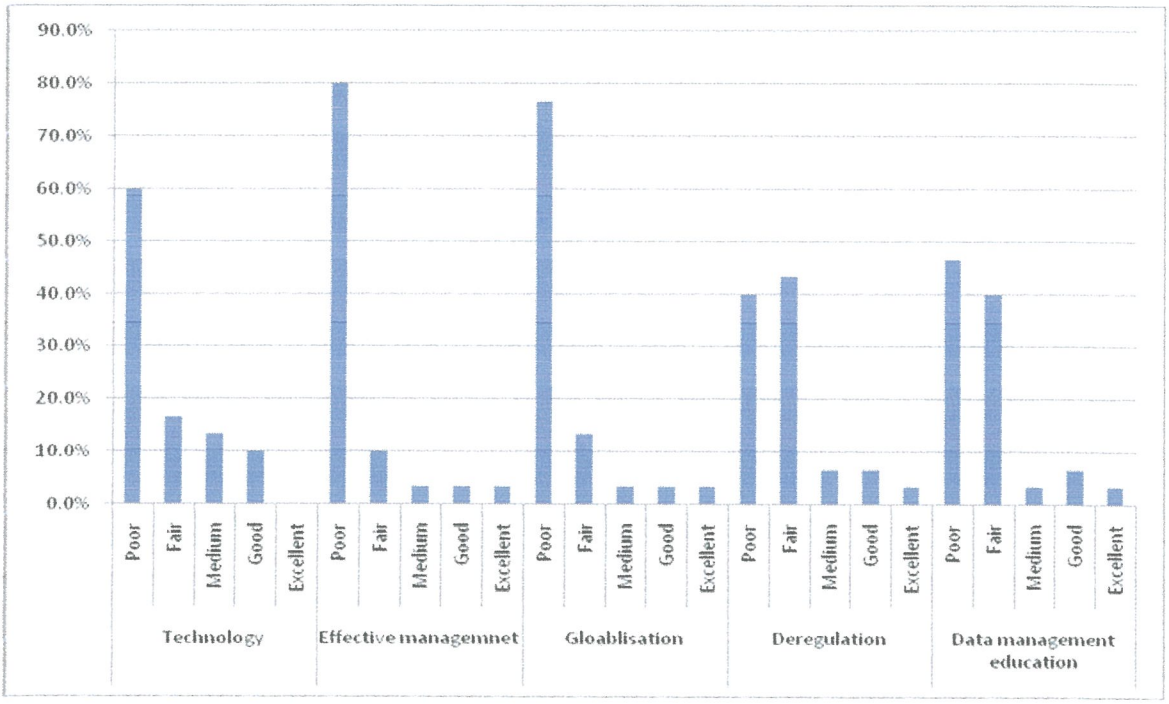


Figure 4. 4: Rating of the hospitals ability to distribute data internationally

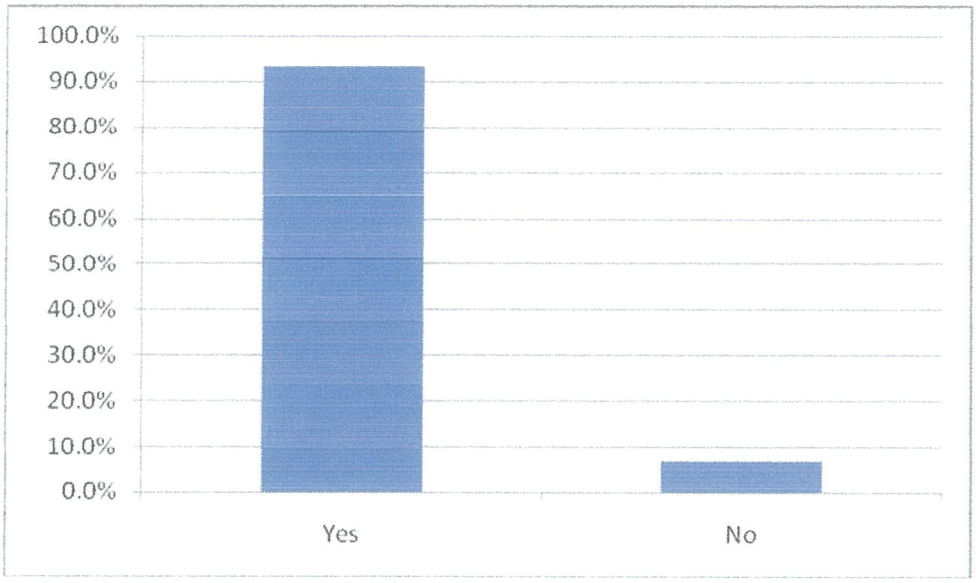


Figure 4. 5: Showing whether web based database would increase efficiency in managing information distribution of the hospital

The findings in figure 4.6 show that a web based database would increase efficiency in managing information distribution of the hospital. This was shown by over 90% of respondents as compared to 7% who did not think so.

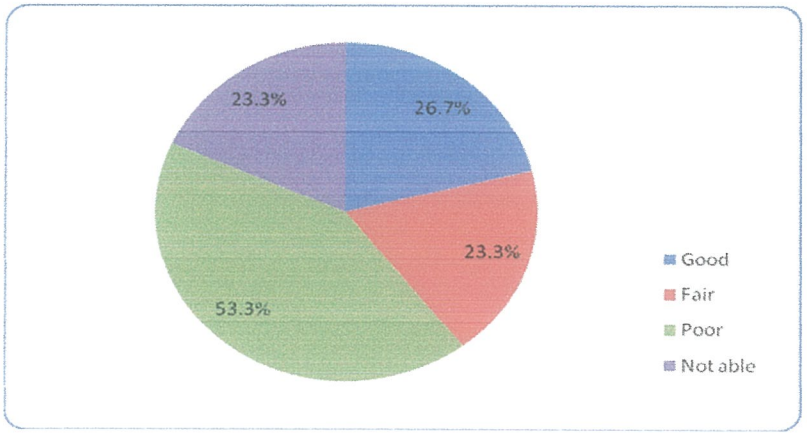


Figure 4. 6: Respondents efficiency in web based database management

The respondents were asked to rate their use of web based database management and findings showed that just over 53% were poor at web based database management, 23.3% were unable to use web based databases, 26.7% were good and 23.3% were fair at using web based databases.

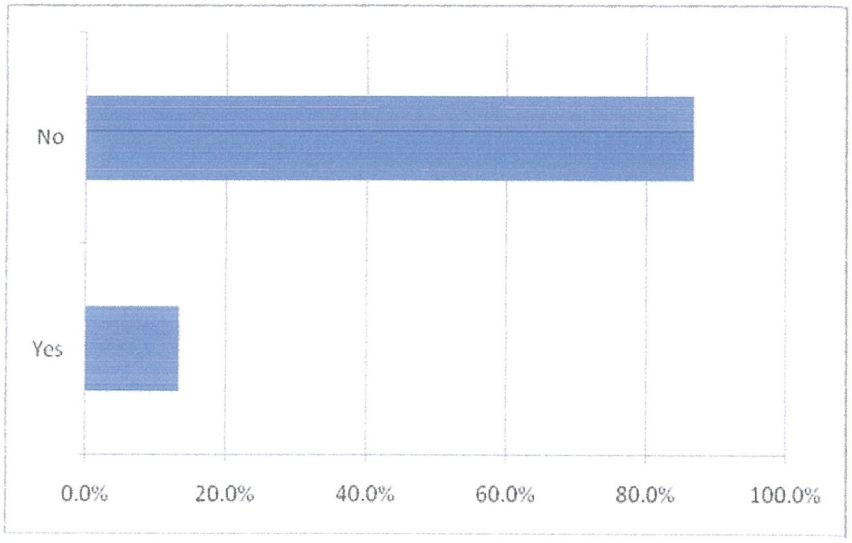


Figure 4. 7: Those who studied courses in web based database

The study further investigated the number of users that had prior studies in the field of web based databases. The findings showed that fewer than 15% of respondents had studied web based database applications whilst the greater majority 86% had not studied web based database management.

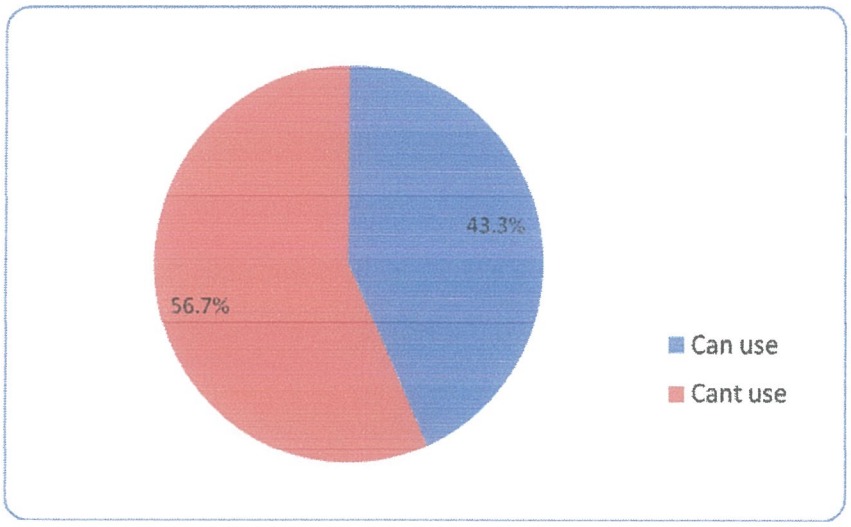


Figure 4. 8: Respondents use of web based applications

When it came to user proficiency in web based applications, 56.7% of respondents were unable to use web based applications while 43.3% were able to. This meant that whilst the majority of respondents had not studied web based applications, the majority of users would be able to use web based applications with minimal training.

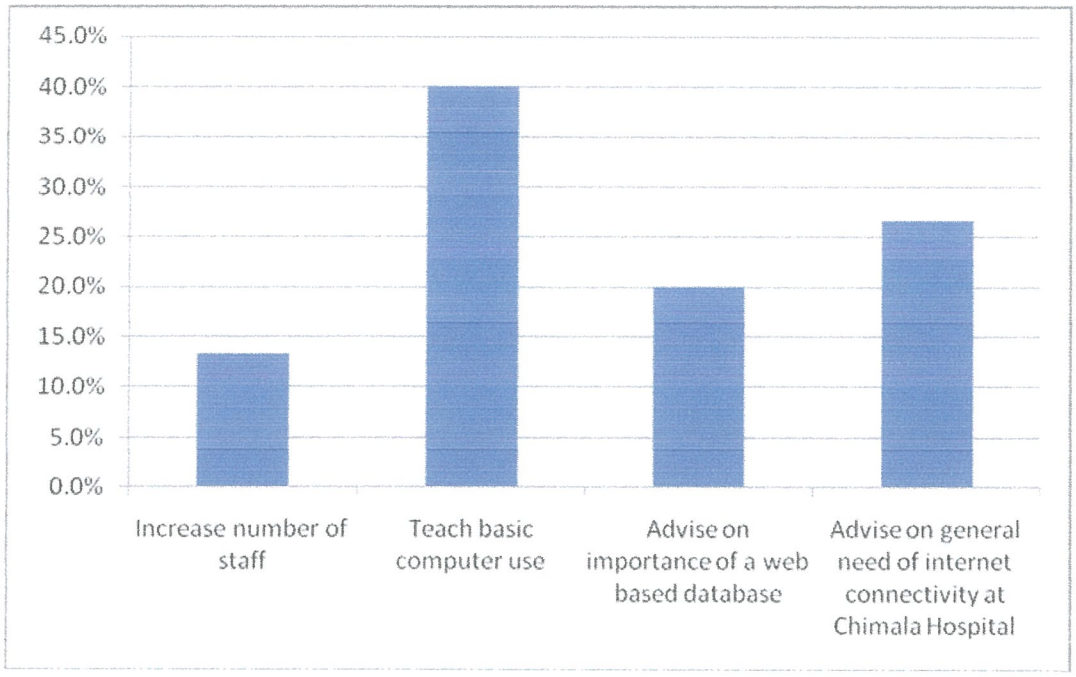


Figure 4. 9: How to implement a web based database use for the hospital

The study findings showed that in order to complete the installation and successful implementation it was required to train the users in basic computer use as noted by 40% of respondents, advice on general need of internet connectivity at the hospital (27%), advice on importance of a web based database (20%) and increase number of staff at the hospital (13%).

The study findings on the other hand have shown that the most pressing matter for the hospital is to have an easy to use application that will enable the hospital disseminate information to the world at large cost effectively. This from the findings can be achieved by minimal training of basic compute and internet use while the hospital may require a skilled database management technician or operator.

4.2 REQUIRMENT ANALYSIS

From the study findings, it a requirements analysis was then made. This presents the actual requirements for the system being designed. This covered what functions the system needed to have so as to benefit the users of the final application. As such this entailed the user interface, functionality and ergonomics of the website. These are further explained below;

4.2.1 USER INTERFACE

The website was designed in a way to accommodate easy maneuverability of users that are not very knowledgeable of Information Technology Systems. As such all a user will need is basic computer and internet skills. The interface colors have been chosen in line with those that the hospital uses, while animated graphics were used to draw attention to pertinent aspects of the website.

4.2.2 FUNCTIONALITY

The website has been designed in line with the prescription of the respondents and thus future users of the website. Major areas that were needed were in the areas of information dissemination about the hospital, educational services provided as well as a booking system for patients. Available specialists and doctors as well as individual patient records have been coded into the website which will allow for users to log into the website and book a visit as well as have a look at the available specialists at the hospital.

4.2.3 USERS

The data findings from the investigations discovered a need to have three major users of the website. These were; the patients/clients, the administrators and the general public. Each of these stake holders as such has a section in the website taking care of their needs.

4.3 SYSTEM DESIGN

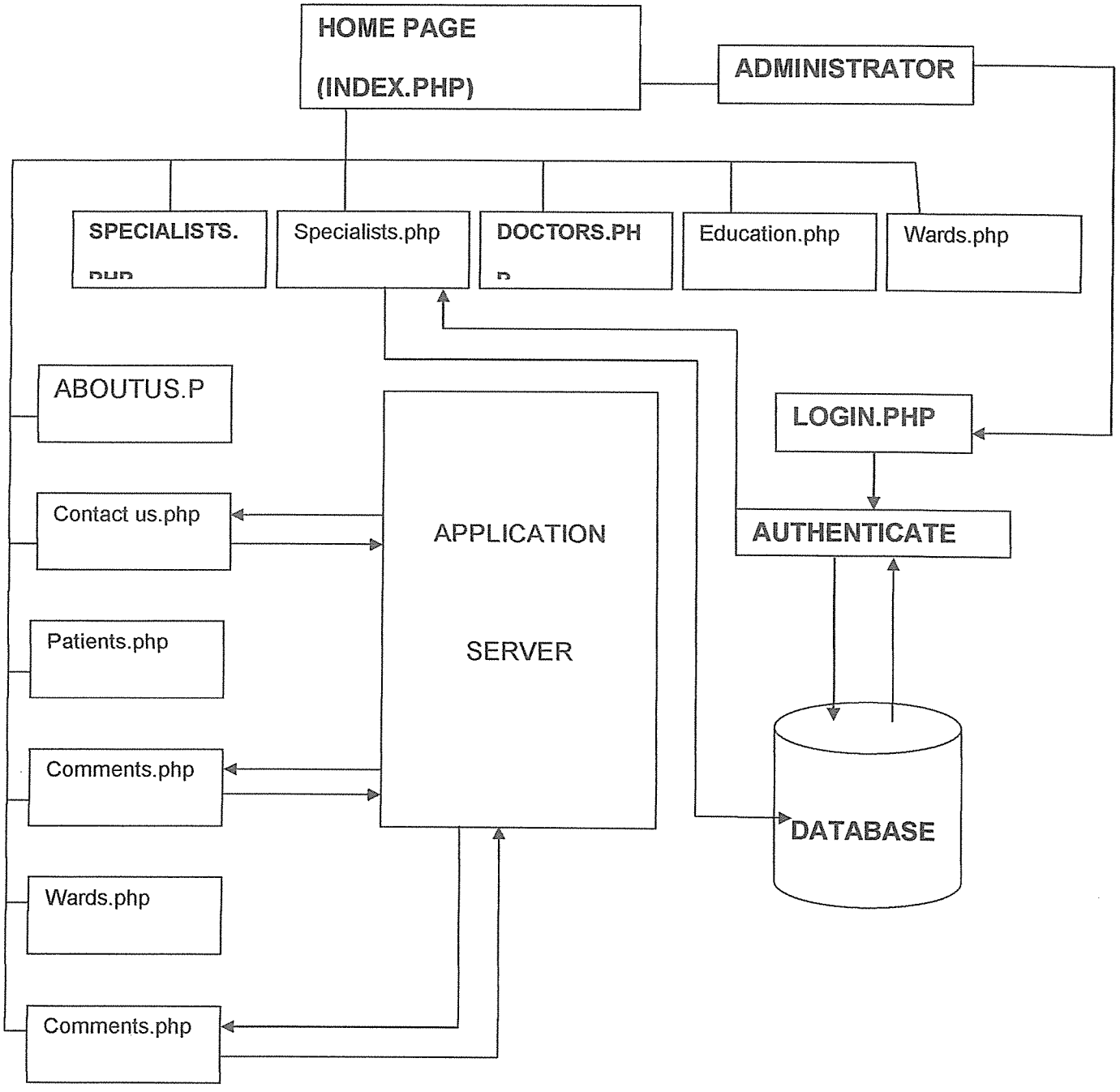


Figure 4. 10: System Design

4.4 HOSTING ARCHITECTURE

This covers the requirements that the website requires of the hosting company.

This is further diagrammatically shown in the figure below;

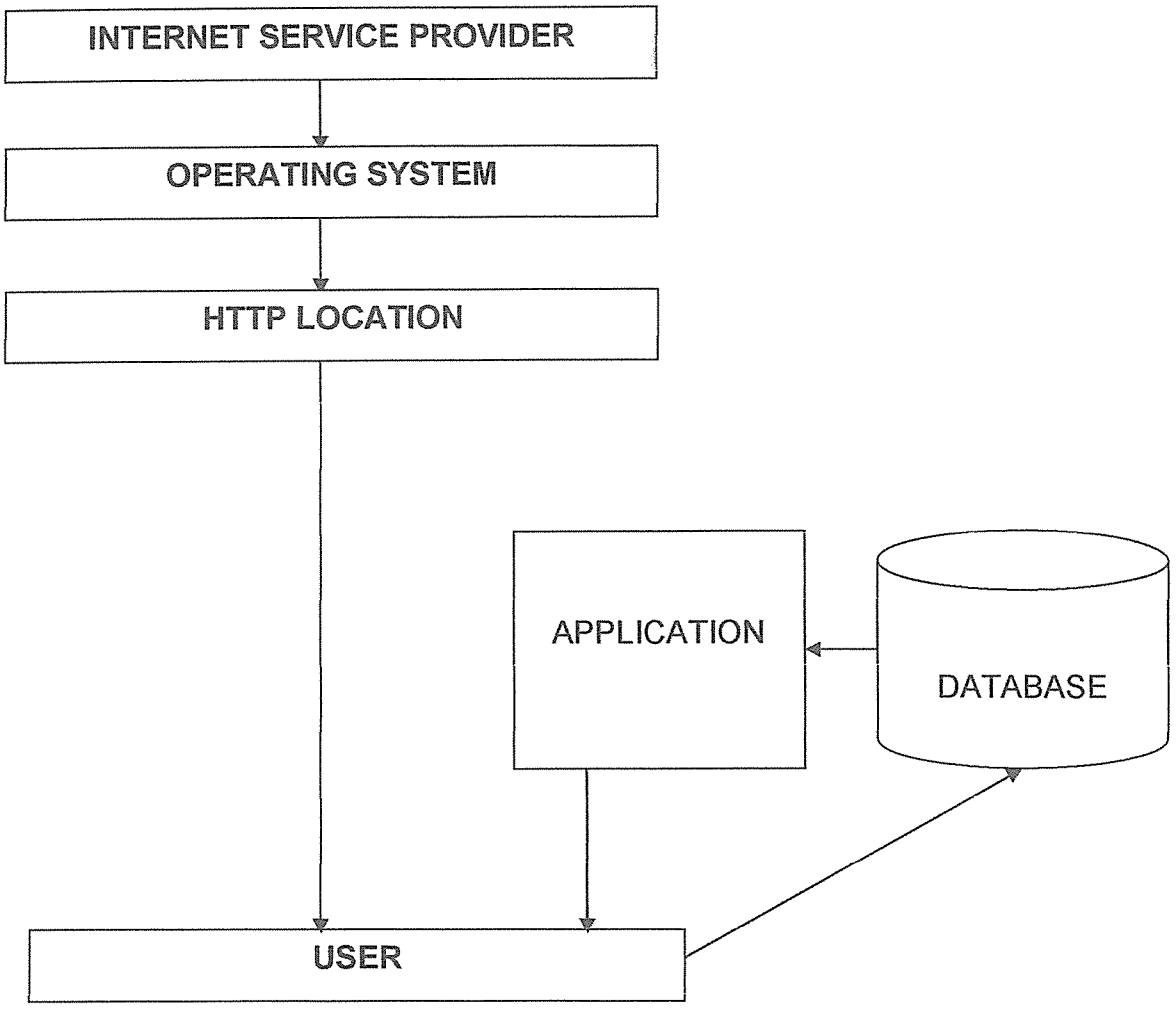


Figure 4. 11: Hosting Architecture

4.5 CLIENT-SEVER ARCHITECTURE

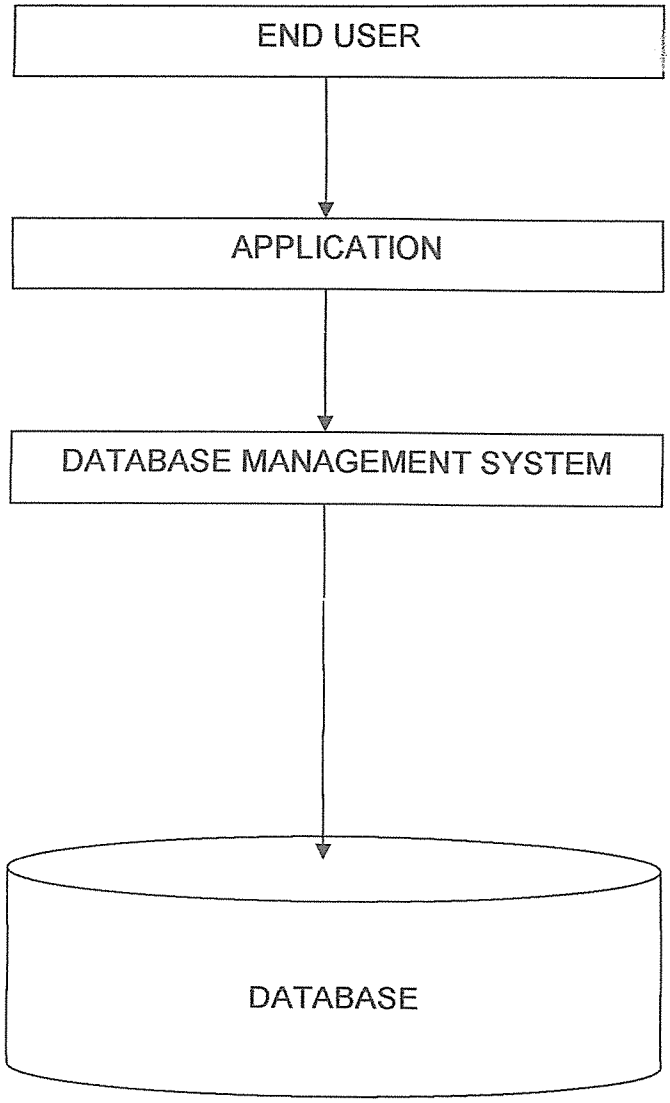


Figure 4. 12: Client-Server Architecture

4.6 DATA FLOW DIAGRAM

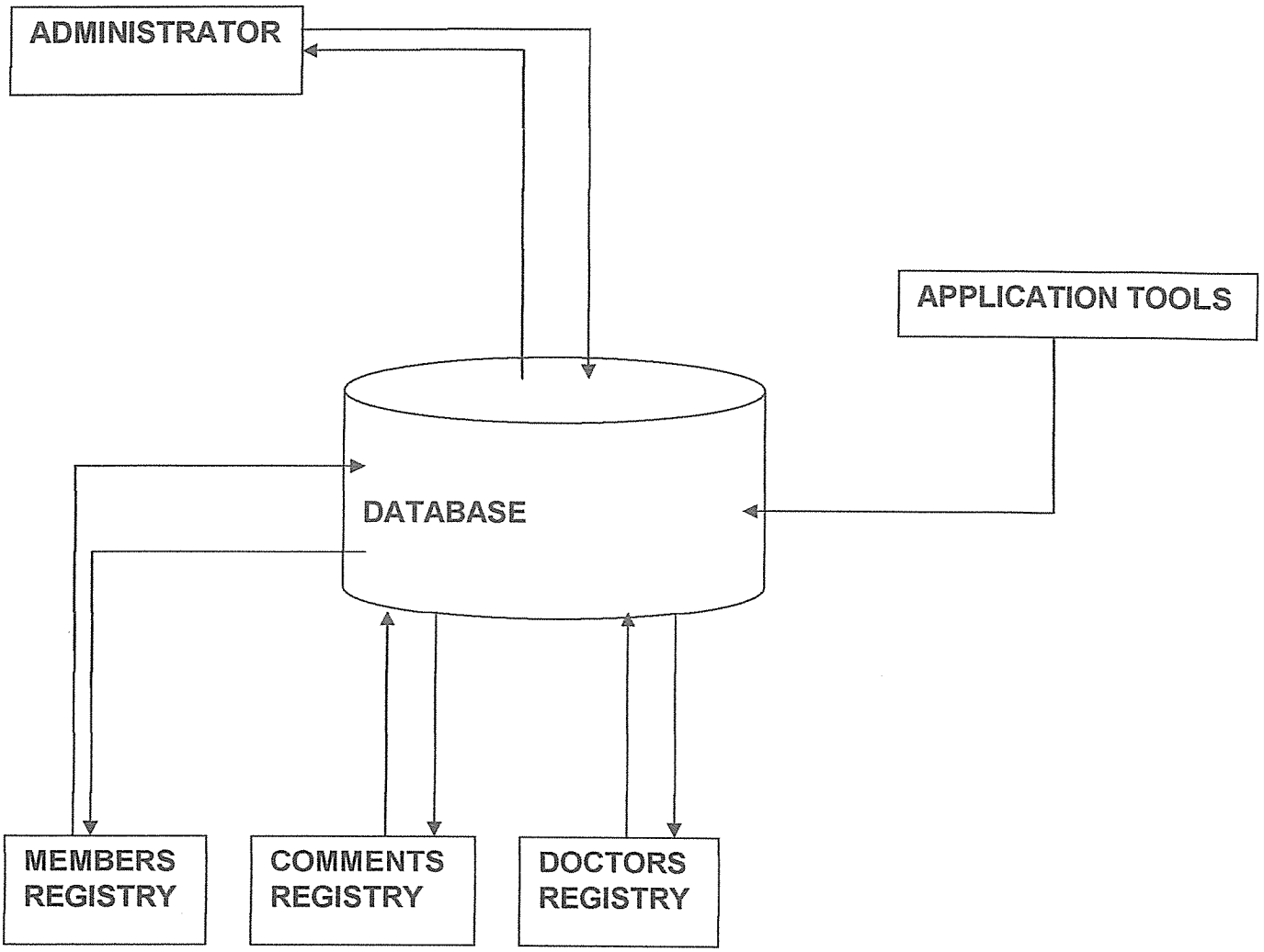


Figure 4. 13: Data Flow Diagram

4.7 SYSTEM IMPLEMENTATION AND MAINTENANCE

This system is expected to be continuously tested and debugged especially after implementation. The dynamism of the user requirements is incremental and as

such it is on this basis that the different modules of the system should be improved in order to satisfy the user. The web pages were tested using different browsers i.e. Mozilla, Internet Explorer, and Opera. The Php pages were tested using a local remote server using a mysql database as a backend.

4.7.2 SECURITY

A system such as this uses tools such as MySQL, HTML, and Php to ensure that users are authenticated for access rights to insert information into the database. Also other considerations were taken into account, for instance. As such, no one should have access to the administration of the system except the database administrator because of the high probability of spamming of the system by unethical users.

4.8 TRAINING

Training of the users of this system, both internal users and external were considered. The computer literacy of the external users of this information gave insight during the design of the interface. The user interface was thus made as easy-to-understand as possible.

4.9 IMPLEMANTATION

This will be done in two phases;

Phase One

The application files are copied to the relevant folders on the host drive. The host drive is the drive in which the application is to be submitted.

Phase Two

This phase will involve inserting the MySQL database script into the database. This will be done by running a SQL code which is listed in the website folder.

4.10 STARTING AND ENDING THE APPLICATION

By opening the home page, the user will be able to view the information and other areas of interest. The application is simply terminated by closing the window.

4.11 MAINTENENCE

Due to the dynamism of the site, constant updates and maintenance of the system is required. This will avail current content to the user and this should be encouraged.

4.11 USER INTERFACE

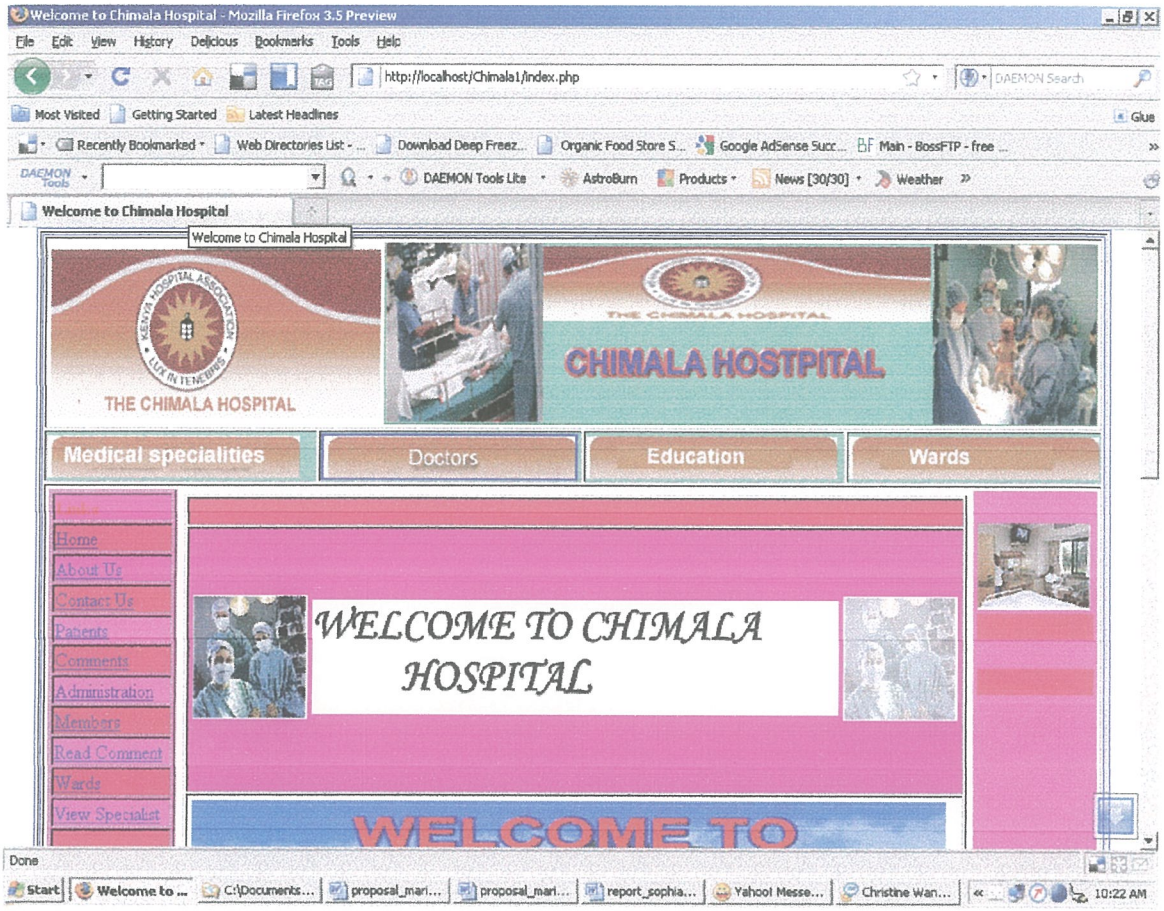


Figure 4. 14: Home Page

This figure shows a welcome page to the website. It provides links to all the other web pages in the website as well as a warm welcome to Chimala animation designed in flash.

Figure 4. 15: Doctors Page

This lists out the doctors and their field and the specialist together with their contacts available at Chimala mission hospital. And it also provides links to other web pages.

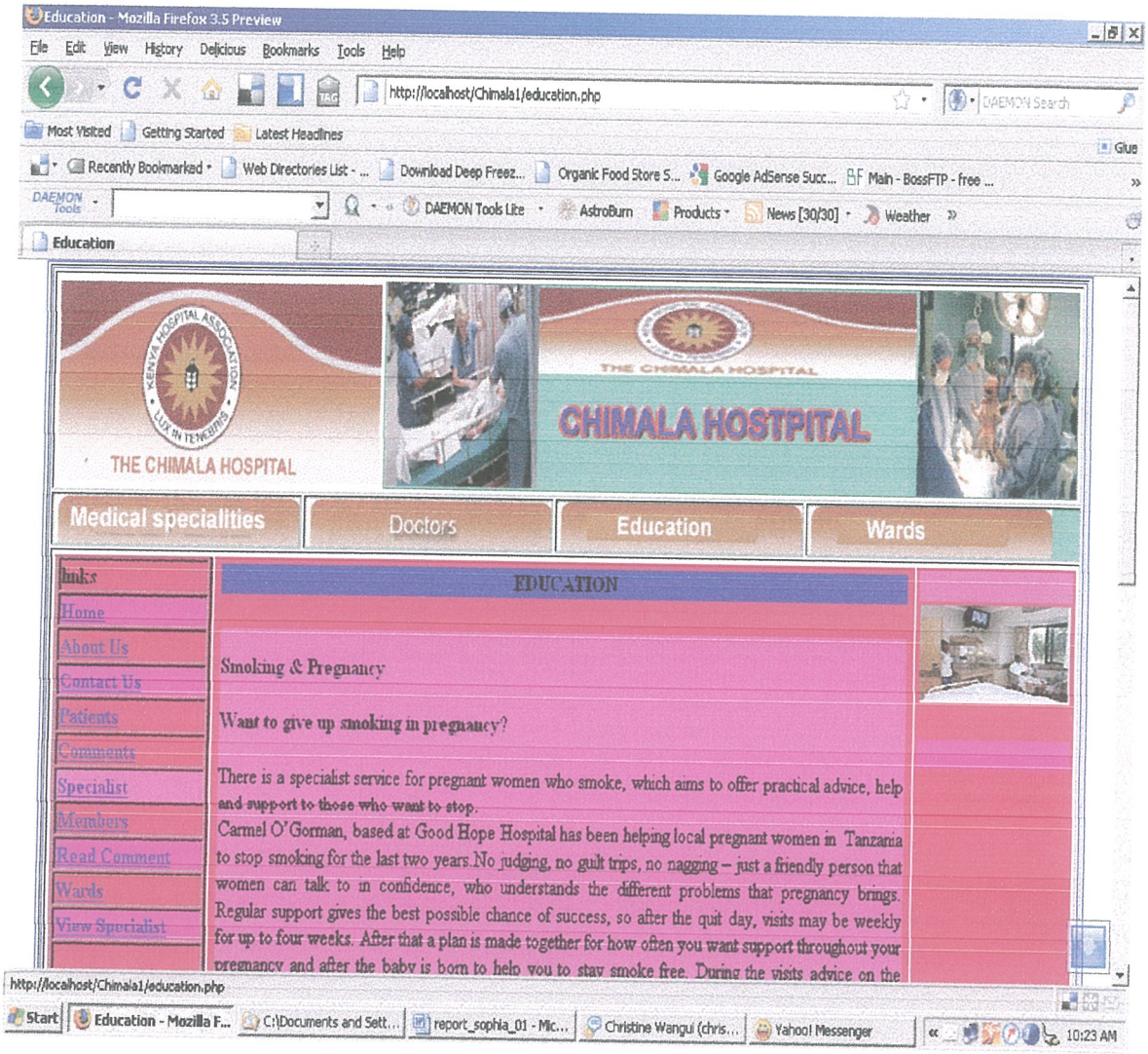


Figure 4. 16: Information/Education Page

This is the first of a series of public relations pages of the website. The hospital runs a community health education program and this is highlighted from this page. It lists out the main topic of the week or theme of the month. It then has links to other areas in the website.

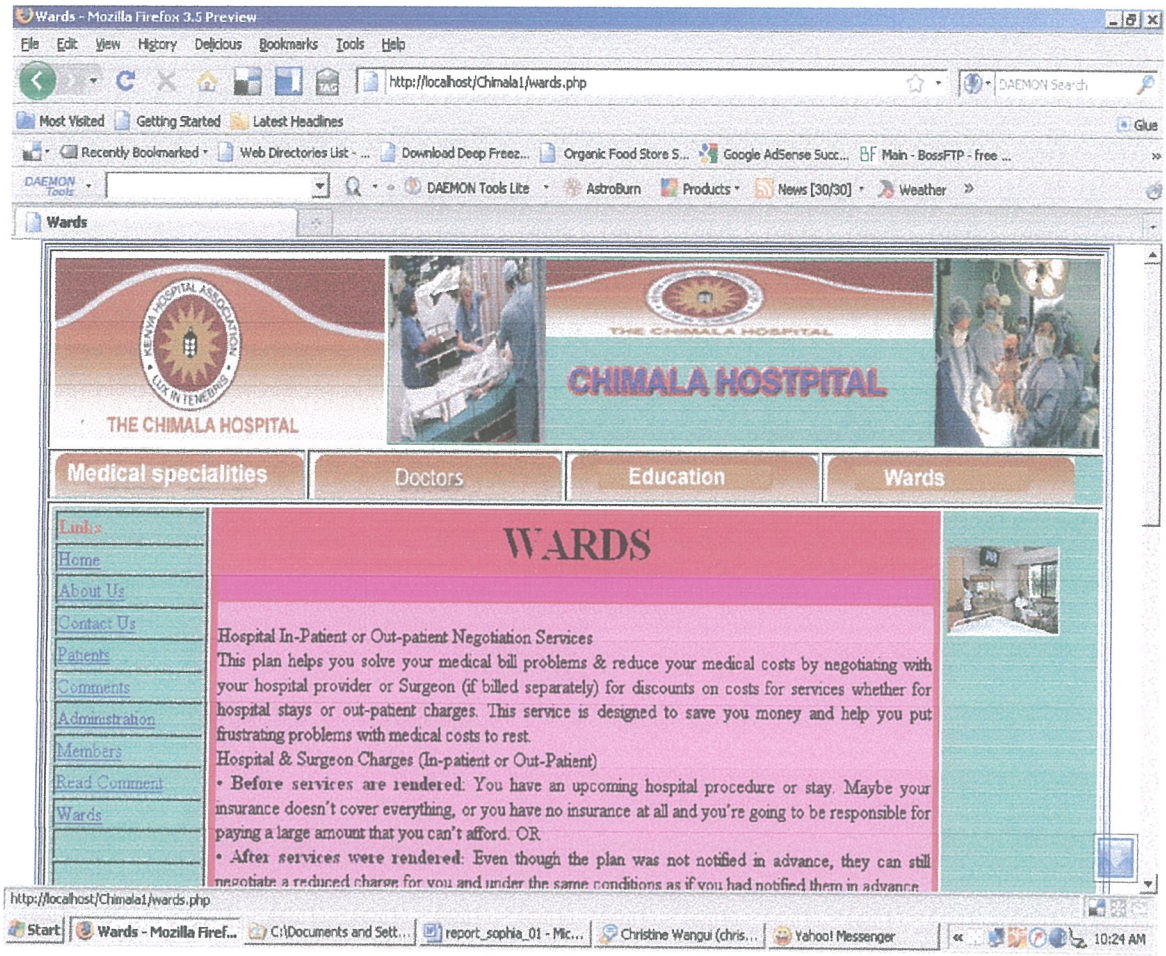


Figure 4. 17: Wards Page

This part of the website shows those different sections (wards) of the hospital and what activities are conducted in these wards. It also has links to other areas in the website.

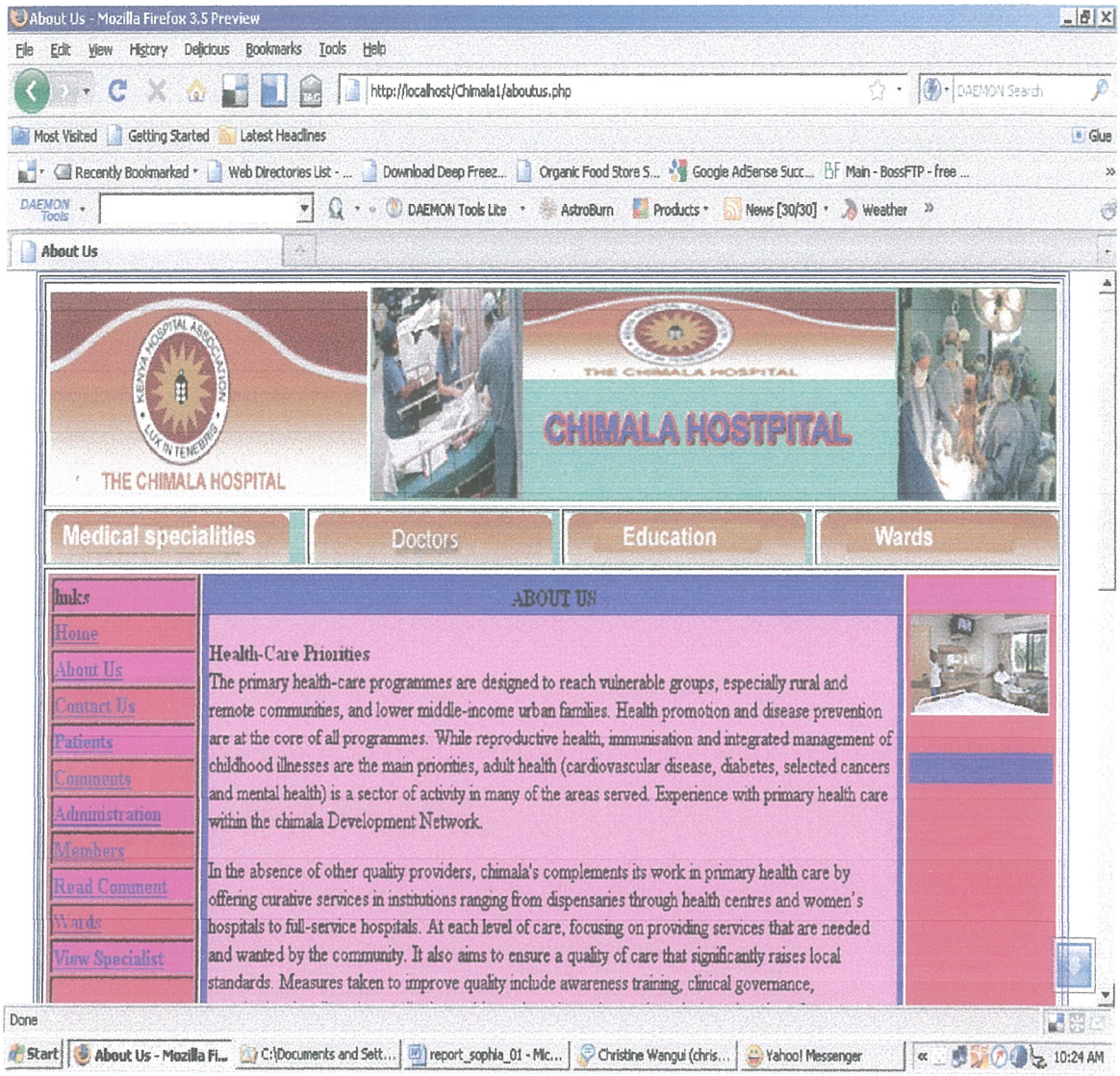


Figure 4. 18: About Us

Figure 4.19 shows what and how activities carried out in the hospital and some history of the hospital activities.

Figure 4. 19: Patients Page

This is the welcome page for the Patient section of the website. It lists out the guidelines for admittance to the hotel and also lists some further advisory information for patients.

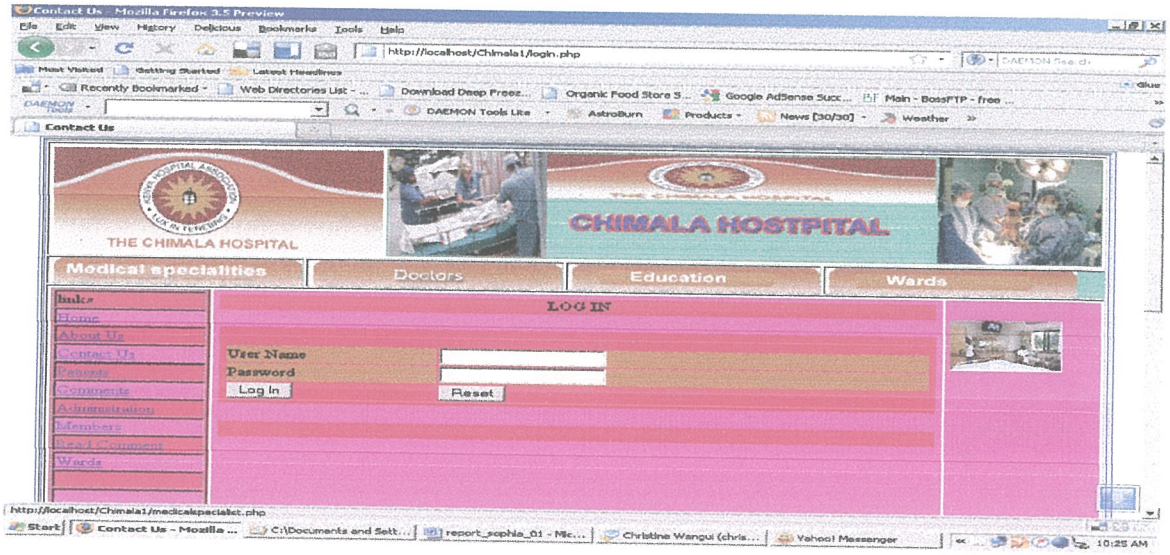


Figure 4. 20: Administrator Log-in Page

Figure 4.21 is the login page for the administrator of the website. It provides access to the data submission section of the website of which the administrator is the sole author.

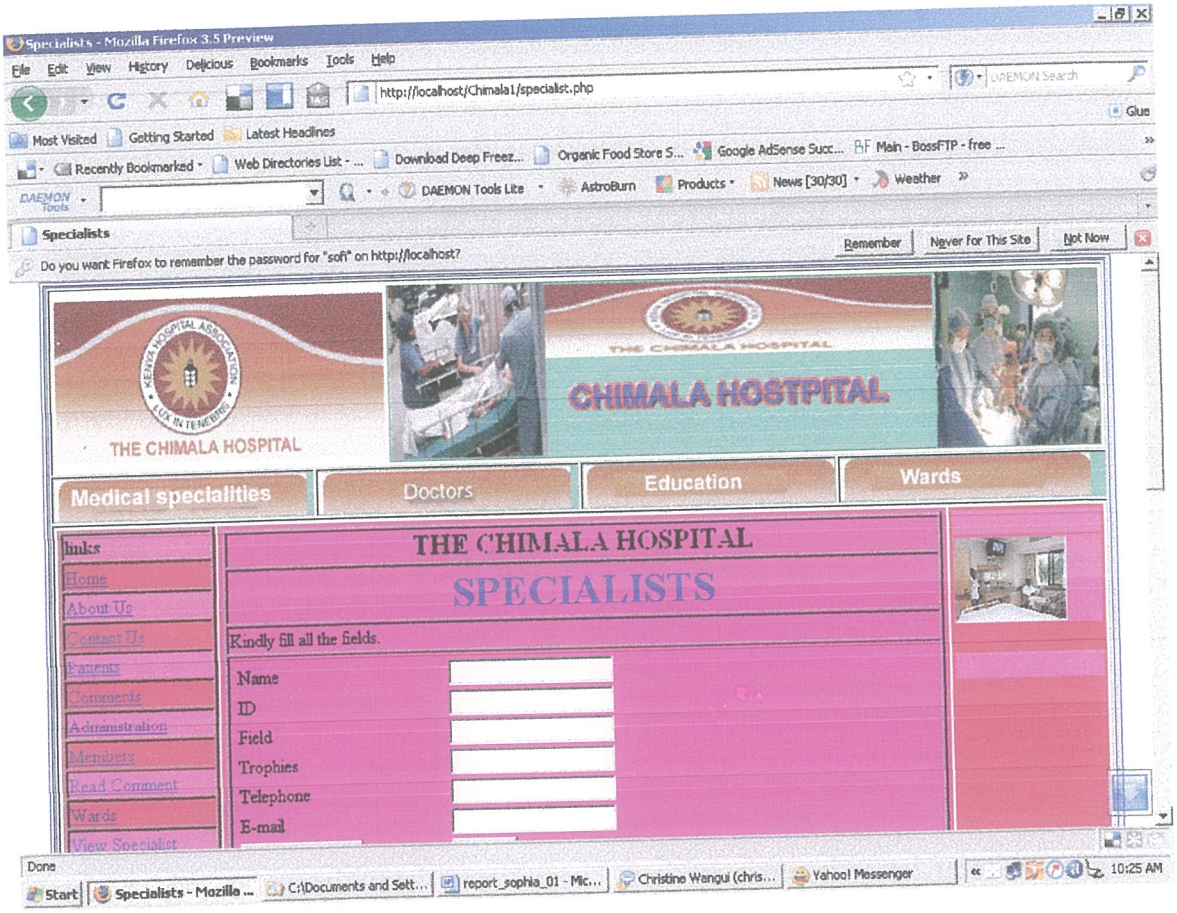


Figure 4. 21: Add Specialist Page

This page is in the administrator section of the website and provides for the administrator to insert specialists into the website with their contact information, name and field of operation.

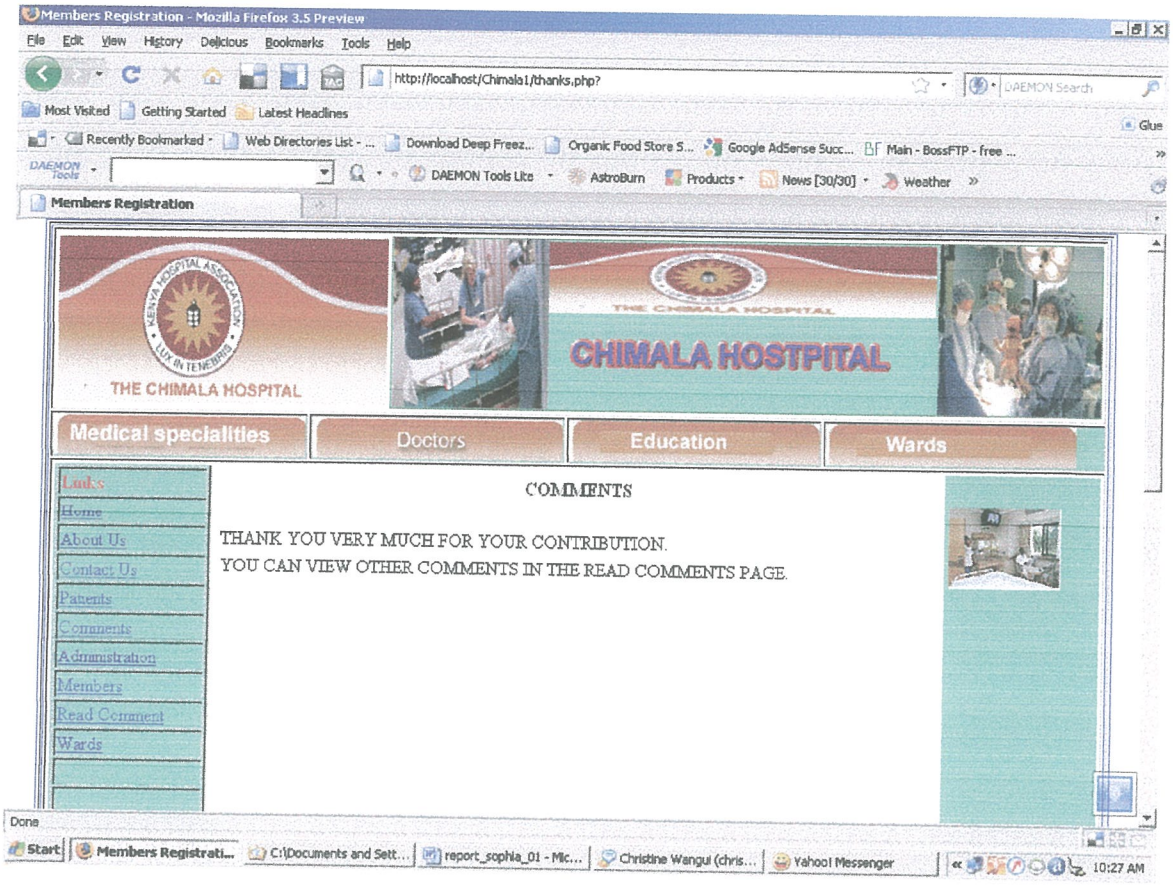


Figure 4. 22: Thank You Page

When data is successfully inserted in the data base through the forms in the website, the thank you page above is displayed.

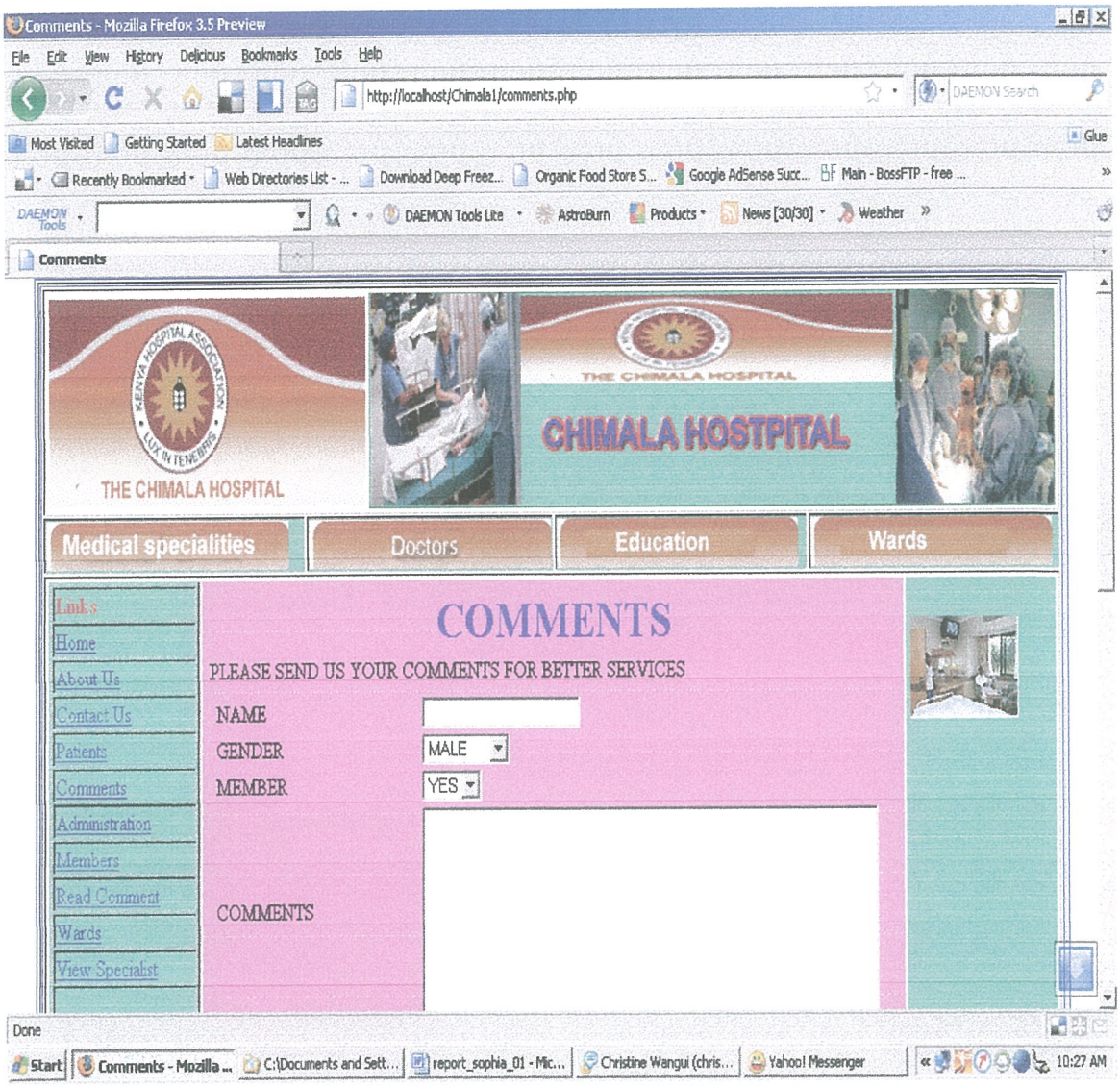


Figure 4. 23: Public Insert Comments

This page provides an opportunity for users of the website to insert information into the website via comments/suggestions after specifying their gender and after they press the submit button, their comments are passed to the database.

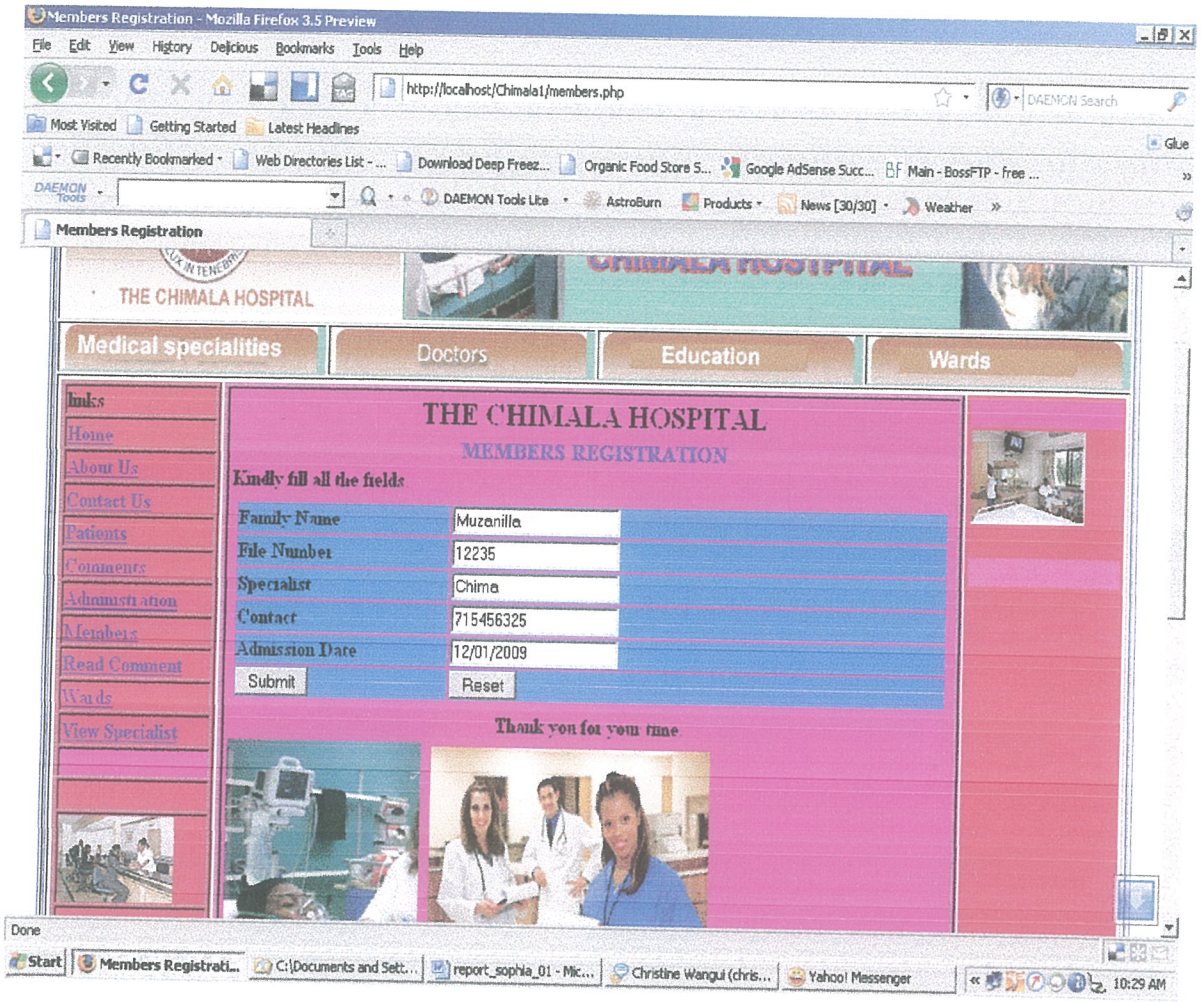


Figure 4. 24: Hospital Registration Form of Members.

This figure page shows the member registration page of the website. Registration of client/patients their file numbers, their assigned specialists, contact and admission date whereby when they submit the information is sent to the hospital database.

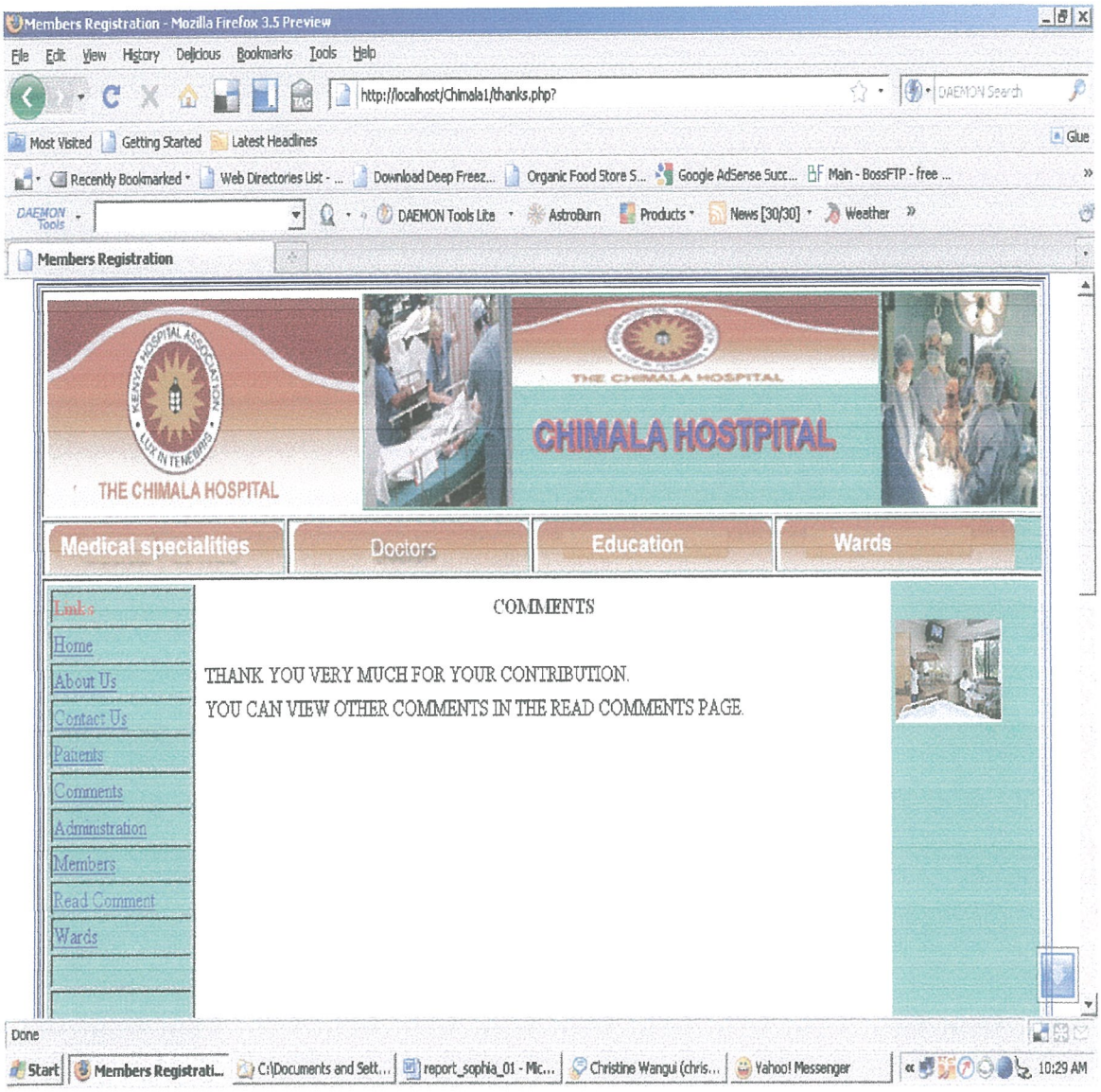


Figure 4. 25: Registration Confirmation Page

This is the page that's displayed after the website users have submitted their comments and the form was filled in successfully, the thank you page listed above is displayed.

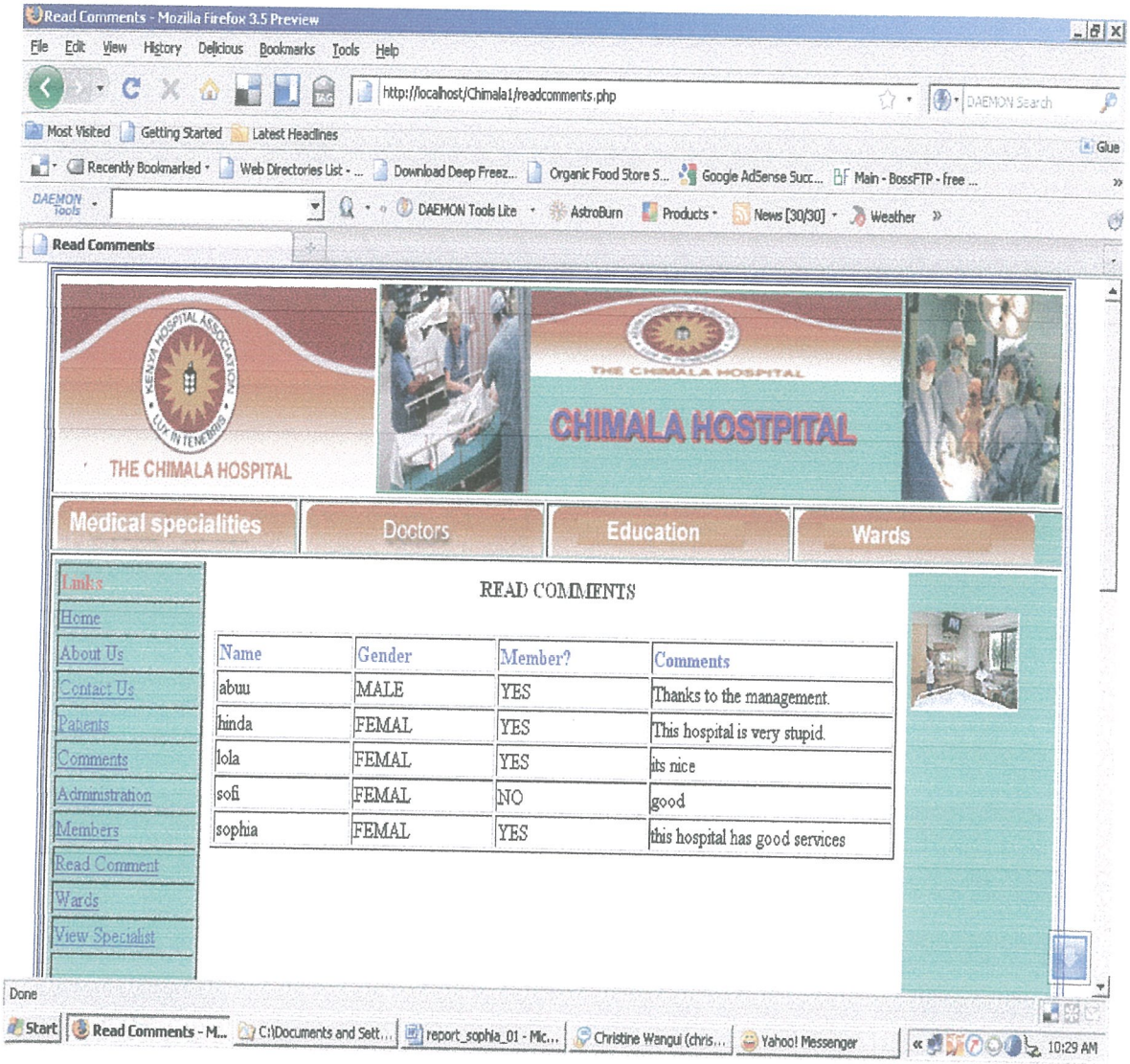


Figure 4. 26: Read Comments Page

The figure above shows the comments posted by various members to the website through the add comments page and are later displayed in this page after being successfully stored in the database.

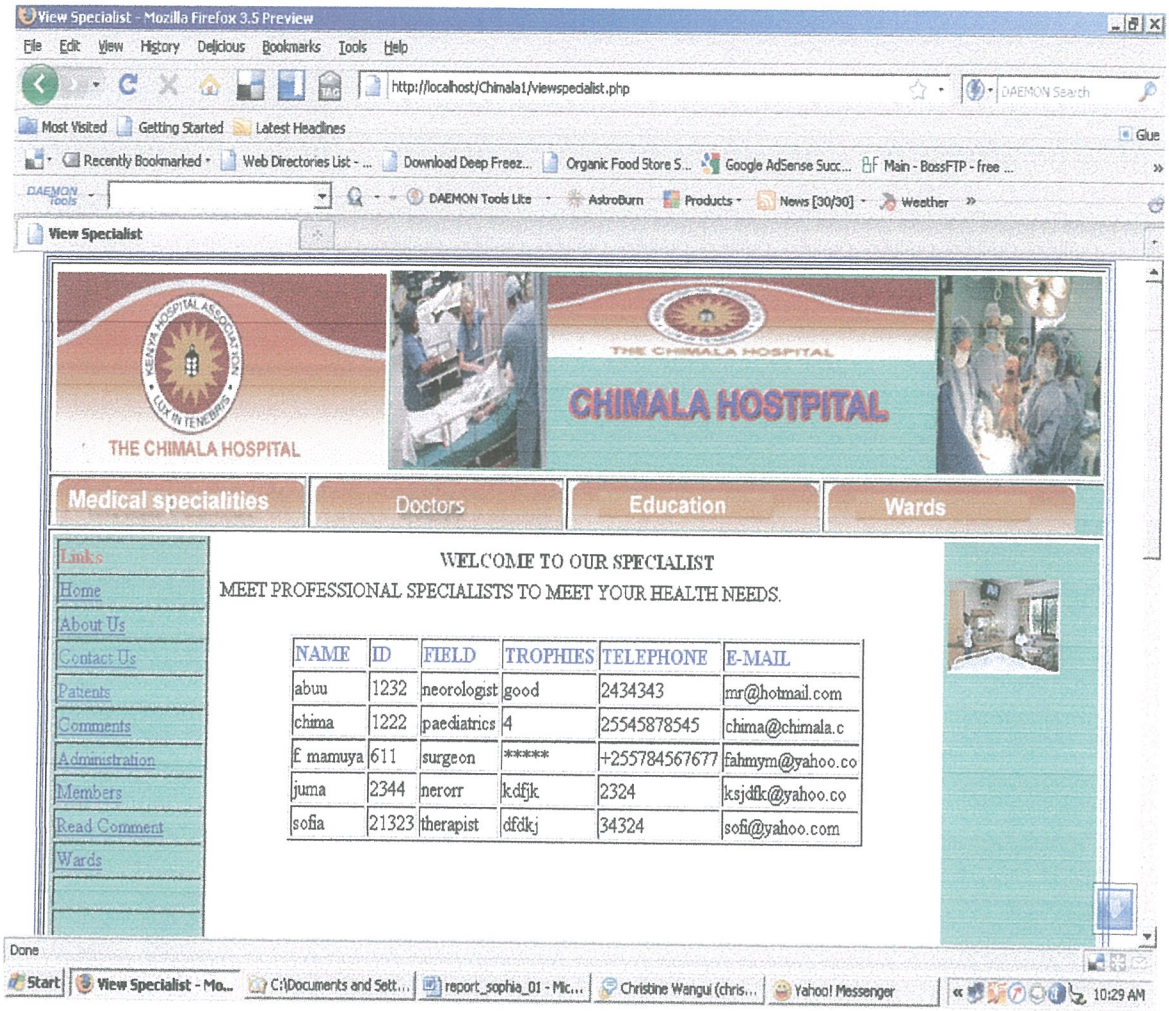


Figure 4. 27: View Specialists Page

This page lists out the various specialists of the hospital along with their contact information, their achievements, and their field of study and area of specialization. It also has links to other web pages.

CHAPTER FIVE

SUGGESTIONS, RECOMMENDATIONS AND CONCLUSIONS

5.0 INTROCUTION

This part of the study looked at the suggestions for the study, the recommendations and the conclusions for the study. These are pointed out below;

5.1 SUGGESTIONS AND RECOMMENDATION

After the successful design and implementation of the website, it is essential that the Hospital should embark on a sensitization exercise which will educate both the clients and staff of the benefits that the website will provide. This should be done in line with the hospital's objectives and focus on the time saving and convenience that the system will provide to the clients.

There may be a phobia or perceived danger of private information loss to the internet. This will be covered by educating and sensitizing users and local community on best safe practices of the internet.

5.2 LIMITATIONS

During the development of this system, the limitations included:

Power Failures: There was a lot power interruption that caused a lot of interference and loss of important data, there by destabilizing the research and slowing down the process, hence delaying the researcher's proposed time frame.

Further field research required long hours to be spent collecting and gathering information which was manually stored in files and folders. This increased the time to develop the system.

The study was costly to the researcher as she had to invest in acquiring the necessary hardware that would enable her accomplish the design and implementation of the study. Also, printing and publishing of the research instruments as well as the proposal and report were also costly as costs of printing and publishing had risen unexpectedly above the budgeted targets.

In spite of the above problems, the project research aims and objectives were completed and will provide great importance to the academic fraternity and the IT sector as a whole. By addressing the objectives and solving the issues that the software aimed to eradicate, it is hoped that if reasonable consultations are made in the future, various institutions will be in position to embrace this ideology and the benefits arising from it. This project can be considered to have achieved the set out goals and objectives as described in the earlier chapters. However the system should run properly when scripted languages are used so as to reduce its vulnerability to unforeseen setbacks.

5.3 FUTHER STUDY

The study objectives were fully met since the study has resulted in a fully functional website for Chimala hospital that provides for information dissemination of the hospital information to the world, it provides an online

avenue for clients/patients to carry out online booking of appointments and leave comments and suggestions.

The study however, proposes that further work be carried out on the following areas;

- Content Management System for managing the website to enable online collaboration of ideas with the world community
- A forum for clients, doctors and specialists to meet online and interact online
- Email facility addition to the website to further support communication with the world community as it is a very fast and efficient means of communication.

5.4 CONCLUSION

The study sought to establish, design and implement a website that would serve as a public relations tool for the hospital but also act as a medium for the community to know about the services the hospital serves as well as benefit from the free information and educational resources provided by the hospital. All objectives of the study have thus been realized and the project now waits further debugging before implementation in to the field.

REFRENCES

Abrahams JF. Molefi M (2007) implementing in Africa "An African Experience; prentice hall

Barry M. Leiner, Vinton G.Gerf, David D. Clark, Robert E.KAHN, Leonard Klienrock Daniel C. Lynch, Jon Postel, Larry G. Robert, Stephen Wolff (2003). A brief history of internet.

Bradshaw D Croenewadld. P Laubscher r et at (2003) initial of disease estimate for developing countries s. Afr Med. J

Brauchli K, Oberi H, HURWITZ N ET AL (2004) diagnostic telepath logy: long-term experience of single institution Virchows Arch;

Brauchli K, O' Mahony D, Banach L. Oberholzer M. (2005) I path a telemedicine platform to support health providers setting. Stud Health Techno inform.

Chetty M. Tucker W, Blake E.(2008) telemedicine in Africa using VOIP combine with a store and forward Approach.

Dr. Salah Mandil (1999) science in Africa telemedicine gets Mobile, world health organization.

Gay L.R (1996) "education RESSEARCH competencies for analysis and application," Toronto, prentice hall of Canada hall of Canada Inc.

Gupta s (1999), "research methodology and statistical," Longman publisher London New Delhi.

Gulube SM, WYNCHANK S (2007) "global connections; international infrastructure and policy" international Development Research center (IDRC) OF Canada.

Jitho R,,Govender PV, Corr P,M Nathoo N. (2003) TELEMEDICINE and neurosurgery experiences 'of a regional unit based in Africa J Telemed Telecare

J.C.R Licklider (1960). Man –computer symbiosis. An internet pioneer ponders the next revolution. Prentice Hall.

Kennedy C. Kirwan J. Cook c et al (2000) telemedicine techniques can be used to facilitate the conduct of multicentre trials J. Teemed Telecare.

APENDIX

Interview guide for the heads of section of chimala hospital

1. To what extent does the internet and proper data management affect developing countries hospitals?

a)……

2. What measures does chimala hospital enforce in managing smooth operations with regards to proper data management?

a)……

3) What extent does chimala hospital extent their fund on proper data management and making it internationally useful?

a)……

4) Do you think that there's any solution that can improve proper data management and make it internationally useful?

Yes ☐ no ☐

5. If yes what are the solutions? Name them

(a)……

6. What are the factors affecting proper data management and making it international useful at chimala hospital.

(A)Technology (b) effective management (C) globalization

D) Deregulation D) data management- education

7. How would you rare the contribution of the above factors to proper data management and making it internationally useful at chimala hospital

1. Poor 2.fair 3. Medium 4. Good 5. excellent

Technology	1.2.3.4
Globalization	1.2.3.4
Effective management	1.2.3.4
Deregulation	1.2.3.4
Data management education	1.2.3.4

8. What is the management strategies put in place for effective data management dispersion?

a)……

b)……

THE ESTABLISHMENT OF WEBASED DATA BASE ON DEVELOPING COUNTRFIES HOSPITALS

CASE STUDY: CHIMALA MISSION HOSPITAL

Dear responders as part of may requirements to the award of a degree in information technology at kamala international university. I am administering this questionnaire to collect information on the establishment of web based data on a developing country hospital.

Case study chimala hospital. Please answer as honesty as possible.

Instruction:

1. Do not sign your name anywhere on this questionnaire.
2. For section A, and B just tick and fill in for the other sections.

Questionnaire for chimala hospital employees.

1.1 gender: male ☐ female ☐

Age: 20-39 ☐ 30-39 ☐ 40-49 ☐ 50- above59 ☐

1.2 Number of years in the hospital

2-5 ☐ 5-10 ☐ 10- above ☐

1.3 education background

Primary ☐ o-level ☐ A-level ☐ others ☐

SECTION B

2.0 What are the services offered by chimala in tele-medicine

a)……

b)……

c)……

2.1 Do you face any problem(S) when managing data and making it internationally useful?

Yes ☐ no ☐

2.1.1 If yes mention them

a)……

b)……

c)……

d) Other specify

2.2 How do you solve the problems you have just mentioned?

a)……

b)……

c)……

d)……

2.3 Have you attended any courses concerning web based database

Yes ☐ No ☐

2.3.1 If no. how does you work

a)……

3.0 Do you advise the hospital in order to increase efficiency in web based database management?

a) Yes ☐ b) No ☐

3.1 If yes how

a)……

3.2 If no what should be done

a)……

3.3 do you think there might be an impact in lacking a web based database?

a)……

THE EFFECTS OF WEB BASED DATABASE ON DEVELOPING COUNTRIES HOSPITALS.

CASE STUDY: CHIMALA MISSION HOSPITAL.

Dear respondents as part of my requirements to the award of a degree in information technology at Kampala international university. I am administering this questionnaire to collect information on the effect of web based database on developing countries hospitals case study chimala hospital. Please answer as honestly as possible.

INSTRUCTIONS.

1. Do not sign your name anywhere on this questionnaire
2. For section A and B just tick and fill in for other sections.

QUESTIONNAIRE FOR CHIMALA HOSPITAL PATIENTS

SECTION A: RESPONDENTS' BACK GROUND(TICK WHERE APPROPRIATE)

1.1 gender: male ☐ female ☐

b) ages: 20-29 ☐

30-39 ☐

40-49 ☐

50-59 ☐

60-above ☐

1.2 numbers of years in the hospital

2-5 ☐ 5-10 ☐ 10-above ☐

1.3 education background

Primary ☐ o-level ☐ A-level ☐ other ☐

SECTION B:

2.0 What are the services offered by chimala in tele-medicine

a) .....

b) .....

c) .....

2.1 do you face any problems when managing data and making it internationally use full?

yes ☐ no ☐

2.2 if yes mention them

a) .....

b) .....

c) .....

d) Other specify

2.3 How do you solve the problems you have just mentioned?

a) .....

b) .....

c) .....

d) .....

2.3.1 Have you attended any courses concerning web based database

Yes ☐ no ☐

3.0 If no. how does you work

a) ……

b) ……

3.1 What ways/ methods do you use to manage data and make it useful to other? People?

a) ……

b) ……

4.0 do you advise the hospital in order to increase efficiency in web based database management

a) Yes

b) No

4.1 if yes how

a)……

4.2 If no what should be done

a) ……

4.2 If no what should be done

a) ……

4.3 do you think there might be an impact in lacking a web based database?

……

ESTABLISHMENT OF A WEB BASED DATABASE ON DEVELOPING COUNTRIES HOSPITALS.

CASE STUDY: CHIMALA MISSION HOSPITAL.

Dear respondents as part of my requirements to the award of a degree in information technology at Kampala international university. I am administering this questionnaire to collect information on the effect of web based database on developing countries hospitals case study chimala hospital. Please answer as honestly as possible.

INSTRUCTIONS.

1. Do not sign your name anywhere on this questionnaire
2. For section A and B just tick and fill in for other sections.

QUESTIONNAIRE FOR CHIMALA HOSPITAL PATIENTS

SECTION A: RESPONDENTS' BACK GROUND (TICK WHERE APPROPRIATE)

1.1 genders: male ☐ female ☐

1.2 ages: 20-29 ☐
30-39 ☐
40-49 ☐
50-59 ☐
60-above ☐

1.3 numbers of years at chimala, mbeya district

2-5 ☐ 5-10 ☐ 10-above ☐

1.4 education background

Primary ☐ o-level ☐ A-level ☐ other ☐

SECTION B:

2.0 How do you view the services offered by chimala?

Very good ☐

Good ☐

Fair ☐

Poor ☐

2.1 Do you think these services could be helpful to other people far from chimala?

a) Yes

b) Somehow

c) Maybe

d) no

3.2 If yes what do you suggest?

a).....

3.0 How does visiting chimala every time you need to get a contact, an appointment, have your file checked for , manual registering of family members and so fourth?

a) 100%

b) 75%

c) 40%

d) Not at all

3.1 have you ever used a web based database?

a) Yes

b) No

3.2 What difference do you see between a hospital with a web based database and one with no

a)……

4.2 What suggestion is appropriate according to you in enhancing a web based database for a hospital

a) Increase number

b) How to operate a computer

c) Advice on the general of internet connectivity in chimala

e) Other specify