

COMPUTERIZED ANTENANTAL INFORMATION SYSTEM
(A CASE STUDY OF FAMILY CARE HOSPITAL)

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JANUARY, 2023

CERTIFICATION

This is to certify that, this project work carried out and is worthy of the award of National Diploma in Computer Science and it's approved in its contribution to knowledge and library presentation.

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DEDICATION

This project is dedicated to Almighty God who has given us the strength and health to carry out this study.

BAYELSA STATE POLYTECHNIC, ALEIBIRI

ACKNOWLEDGEMENT

Honestly the successful completion of this project is attributed to my proficient and efficient supervisor Mr. Tuperekiye E. Sese for his tireless effort, useful suggestion and constructive criticism during the course of this project despite the time factor he still squeezed up to assist in achieving this aim.

Regards also goes to my amiable head of department Mr. Paul Yarikeme and the rest of my lecturers for their continuous mentoring, moral and academic counseling to me, they greatly boosted my ego.

My unreserved thanks goes to my lovely mum, Mrs. Grace Obonin, who was very supportive as regards to finance, advice and prayers.

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ABSTRACT

The system intended to provide correction of error routine when mistake occur during the entry of data and also provides fast and reliable response time. The purpose of this project is to focus on designing and implementation of a computerized antenatal information system with the aim of creating dynamic and flexible database that will be implemented with maximum performance. The system will be implemented to facilitate easy and effective registration of the patient and improve the operation of the antenatal unit of the hospital. It also provides quick means for information storage and retrieval which reduced the time wasted on file processing. The searching and updating of records will also be very easy for the users of the system. The data will be gathered through the interview with the staffs of family care hospital. HTML and Visual basic programming languages will be used to design the interface of the system and MYSQL database will be used to design the database of the system while PHP will used as the server side scripting language for communication between the interface and the database. The preliminary result of the research shows that the system can store large amount of data and it can provide accurate information. It is concluded that the system can provide a faster means of information storage and retrieval which will simplify the operation to the users.

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CHAPTER ONE

INTRODUCTION

1.0 BACKGROUND OF THE STUDY

Antenatal care is a type of preventive healthcare. It is provided in the form of medical checkups, consisting of recommendations on managing a healthy lifestyle and the provision of medical information such as maternal physiological changes in pregnancy, biological changes, and prenatal nutrition including prenatal vitamins, which prevents potential health problems throughout the course of the pregnancy and promotes the mother and child's health alike.

Antenatal is the period before the child is born. Antenatal tests and exams are important tools for protecting the health of a pregnant woman and her developing child. Parents should be encouraged to educate themselves on the benefits and risks associated with the various antenatal screening procedures and work with their obstetrician to formulate an individualized prenatal care plan. Physicians also use antenatal tests to determine various characteristics of the fetus, such as gestational age, size, and position in the uterus, or to verify the presence of multiple fetuses. These worries are often weighed against the anxiety associated with antenatal tests and their risks. These include antenatal, child health surveillance and minor surgery clinics.

1.1 IMPORTANCE OF COMPUTERIZED ANTENATAL

The work will be able to provide information on educating especially first time pregnant mothers about normal discomforts of pregnancy, emotional aspects, including post-natal depression so that mothers are being reassured and fears driven away.

The use of database programs may be an efficient, flexible method to enhance prenatal care and improve pregnancy outcomes such as.

1. Ultrasound scans use sound waves to build a picture of the baby in the womb. The scans are painless and have no known side effects on mother or babies, and can be carried out at any stage of pregnancy.
2. The traditional 2D ultrasound produces flat and outlined images which can be used to see your baby's internal organs and help detect any internal issues. These black and white images help the sonographer determine the baby's gestation, growth, heartbeat, development and size.
3. The purpose of the mid-pregnancy scan sometimes known as a fetal anomaly scan is to check your baby's health and development. It's administered between 18 and 21 weeks of pregnancy.

1.2 BENEFITS OF COMPUTERIZED ANTENATAL

Through antenatal care, pregnant women can also access micronutrient supplementation, treatment for hypertension to prevent eclampsia, as well as immunization against tetanus. Antenatal care can also provide HIV testing and

medications to prevent mothertochild transmission of HIV. Other benefits include:

- To assess the state of health of the mother and the fetus early in pregnancy.
- To prevent unwanted complications during pregnancy. ...
- To prevent maternal and child mortality.
- To promote the health of the mother and their babies. ...
- To foster good husband, wife and child relationship.
- It reduces paper work.
- It reduces dead rate.

1.3 AIM AND OBJECTIVES OF THE STUDY

This project is aimed at developing a computerized antenatal information system that will be of immense importance to the hospital. This system can be used to maintain the antenatal information in the Hospital. The project has the following objectives:

- To develop a system that will make retrieval of antenatal information more efficient and reliable.
- To allow simultaneous viewing and update of the antenatal information.
- To design a system that can eliminate missing of antenatal information.

1.4 SIGNIFICANCE OF THE STUDY

The significance of this project work cannot be over emphasized. This antenatal information system was done to achieve a more reliable faster efficient and

accurate means of keeping antenatal information and to ensure timeless and efficient output by the use of computer. Considering the current system and resources which should be merged to yield maximum benefit of the database system, it is very beneficial to Family Care Hospital and extremely by improving the speed, also accurate retrieval of information and space required which are very important in designing the system.

1.5 SCOPE OF THE STUDY

This project work will only focus on the present automatic system of keeping antenatal information at the Family Care Hospital.

1.6 LIMITATION OF THE STUDY

This project work is only limited to the antenatal information only, Therefore other valuable services will not be considered due to time constraint and resources. This project concentrates only on a limited area in order to produce a workable system.

1.7 ORGANIZATION OF THE STUDY

Chapter one introduces the study and explains the background of the subject being discussed. It also states aim and objectives of the study, and the benefits by the current system, defines of the scope and limitation of the study and explains some terms that was used in the project.

Chapter two reviews the related literatures and also tries to come to a conclusion based on the research carried out by scholars in the past to enlighten us move on the subject being researched upon. It also goes to further to explain the concept of information system and programming language and database used during the course of the project.

Chapter three defines system analysis which is a phase of system development cycle that highlights the requirement of the system under review in details. This chapter is made up of section under which the problems currently faced by the system is restated, the system is analyzed, input and the output of system is discussed, the human element of the system is elaborated upon and finally the method through which data was collected is outlined.

Chapter four deals with the general design and implementation of the new system and also discusses about the design of the new input and the output requirement and design, the software specification, filesto be maintained and the human element of the new system.

Chapter five provide a summary of all chapters in the study and proffer a recommendation.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter we shall be looking at literatures of various scholars who have contributed to knowledge in the area of antenatal care and also we shall be looking at contributions made on the present system, the programming language as well as the database that will be used in the cause of this project.

2.2 REVIEW OF THE RELATED LITERATURE

Prenatal care also known as Antenatal care is the routine health control of presumed healthy pregnant women with or without symptoms screening, which

helps to diagnose diseases or complicating obstetric conditions without symptoms, and to provide information about lifestyle, pregnancy and delivery.

The availability of routine prenatal care, including prenatal screening and diagnosis, has played a part in reducing the frequency of maternal death, miscarriages, birth defects, low birth weight, neonatal infections and other preventable health problems.

Traditional prenatal care in high-income countries generally consists of:

- Monthly visits during the first two trimesters (from the 1st week to the 28th week)
- Fortnightly visits from the 28th week to the 36th week of pregnancy

- Weekly visits after 36th week to the delivery, from the 38th week to the 42nd week
- Assessment of parental needs and family dynamics.

The traditional form of antenatal care has developed from the early 1900s and there is very little research to suggest that it is the best way of giving antenatal care (Bergsjö and Villar). Antenatal care can be costly and uses many staff. The following paragraphs describe research on other forms of antenatal care, which may reduce the burden on maternity services in all countries (McDonagh 1996). The (WHO) recommends that pregnant women should all receive at least eight antenatal visits to spot and treat problems and give immunizations. Although antenatal care is important to improve the health of mother and baby, many women do not receive eight visits. There is a little evidence behind the number of antenatal visits pregnant women receive and what care and information is given at each visit. It has been suggested that women who have low-risk pregnancies should have fewer antenatal visits. However, when this was tested, women with less visits had babies who were much more likely to be admitted to neonatal intensive care and stay there for longer. A new alternative for some of the routine prenatal care visits is Telemedicine.

There are many ways of changing health systems to help women access antenatal care, such as new health policies, educating health workers and health service reorganization. Community interventions to help people change their behavior can also play a part. Examples of interventions are media campaigns

reaching many people, enabling communities to take control of their own health, informative-education-communication interventions and financial incentives. A review looking at these interventions found that one intervention helps improve the number of women receiving antenatal care. However these interventions used together may reduce baby deaths in pregnancy and early life, lower numbers of low birth weight babies born and improve numbers of women receiving antenatal care.

The World Health Organization (WHO) reported that in 2015 around 830 women died every day from problems in pregnancy and childbirth. Only 5 lived in high-income countries. The rest lived in low-income countries. (Hill et al, 2001).

A study examined the differences in early and low-weight birth deliveries between local and immigrant women and saw the difference caused by prenatal care received. The study, between 1997 and 2008, looked at 21,708 women giving birth in a region of Spain. The results indicated that very preterm birth (VPTB) and very low birth weight (VLBW) were much more common for immigrants than locals (Castelló et al., 2012). The study showed the importance of prenatal care and how universal prenatal care would help people of all origins get proper care before pregnancy/birth (Castelló et al., 2012).

2.3 THE MAIN OBJECTIVES OF ANTENATAL-CARE

1. Maintenance of health of mother during pregnancy.

2. Promote physical, mental and social well being of mother and child.
3. Ensure delivery of a full term healthy baby.
4. Early detection of high risk cases and minimize risks by taking appropriate management.
5. Prevent development of complications through health education, adequate nutrition, exercise, vitamin intake and appropriate medical and pharmaceutical intervention.
6. Screening for conditions and diseases such as anemia, STIs, HIV infection, mental health problems, and domestic violence.
7. Teach the mother about child care, nutrition, sanitation and hygiene.
8. Decrease maternal and infant mortality and morbidity.
9. Remove stress and worries of the mother regarding the delivery process.
10. Provide safe delivery for mother and educate mother about the physiology of pregnancy and labor by demonstrations, charts and diagrams so that fear is removed and physiology improved.

2.4 GROUP VERSUS INDIVIDUAL CARE

Group antenatal care has a couple of obvious benefits: it costs less than one-to-one visits and the women have more hours of care as a group than on their own. Only small studies have been conducted looking at group care but they have found that mothers' knew more about pregnancy, birth and parenting in the group setting. The mothers reported liking the group care and the review found

no difference between how the pregnancies developed between the group and individual setting.

Midwife-led care for low-risk women is where a midwife team (and GP if needed) is leading the care a woman receives and she does not usually see a specialist doctor in her pregnancy. Women with midwife-led pregnancies are more likely to give birth without being induced but have natural labors. However they are less likely to have their waters broken, an instrumental delivery, episiotomy or preterm birth. Around the same number of women in each group had a caesarean section.

2.5 PRENATAL EXAMINATIONS

At the initial antenatal care visit and with the aid of a special booking checklist the pregnant women become classified into either normal risk or high risk.

In many countries, women are given a summary of their case notes including important background information about their pregnancy for example their medical history, growth charts and any scan report. If the mother goes to a different hospital for care or to give birth the summary of her case notes can be used by the midwives and doctors until her hospital notes arrive.

A review looking into women keeping their own case notes shows they have more risk of having a caesarean section.

Prenatal diagnosis or prenatal screening (note that "Prenatal Diagnosis" and "Prenatal Screening" refer to two different types of tests) is testing for diseases or conditions in a fetus or embryo before it is born.

Obstetricians and midwives have the ability to monitor mother's health and prenatal development during pregnancy through series of regular check-ups.

Physical examinations generally consist of:

- Collection of (mother's) medical history
- Checking (mother's) blood pressure
- (Mother's) height and weight
- Pelvic exam
- Doppler fetal heart rate monitoring
- (Mother's) blood and urine tests
- Discussion with caregiver

E-HEALTH

E-Health is defined as: The use of information and communication technologies (ICT) in support of health and health-related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research (Joaquin, A. 2010).

An example of areas where E-Health is used includes treating patients, conducting research, educating the health workforce, tracking diseases and monitoring public health. (World Health Organization, 2013) In summary E-Health is a useful term to describe the combined use of electronic communication and information technology within the healthcare sector

(Mitchell, 2009). E-health has its origin in telemedicine of which was mostly developed during the mid 1900's. The development of telemedicine was not only so that the individual could easily seek medical advice over the phone but also for hospitals demand for sending Electrocardiograms over the telephone lines. This meant that the distances decreased and medical care was facilitated. Due to the bandwidth problem of the telephone network the development stopped for a while but with the digital boom came new technology that allowed sending information via the data network, which expanded significantly.

According Tagger (2015). Techniques of recording, storing and retrieving information were developed early in the twentieth century medical schools and teaching hospitals recognized the need for better methods of recording health information. Thus, by the turn of the century, physicians were pressing for standardization and quality in medical recording. The endeavors of these health professionals were instrumental in the development of antenatal information system.

The term "Health Information System" denotes a network of interacting, interrelating communications channels found in any health care institutions or organizations that deals with generation. Storage and retrieval of health information. The end product of information flow in some institutions such as hospitals is the antenatal information. The antenatal information tells who, what, where, when and how an individual's experience in a given health care facility or health delivery system. Any individual who presents himself either

for illness or for preventive health care such as an annual physical examination. Will have a medical record generated for him. The content of the medical record may include a history, result of the physical examination, observation, Findings, orders, diagnostic test and treatment plans (Anuar, 2006).

The medical record administration profession is concerned with the design, implementation and management of health information system. The profession can give knowledge of health care, information management administration to meet the demand of today's health care industry. Individuals responsible for the custodial care of medical record were brought together in 1928 and formed the American Medical Record Association. With the aim of striving for higher standards of clinical care through better quality medical records. The medical record profession continues to strive for this objective while changing to meet the rapidly increasing demands of health care technology (Turner Elizabeth, 2007).

2.6 INFORMATION SYSTEM

We will look at information and system separately before defining an information system. Information comes from selecting, summarizing, and presenting facts in such a way that it is useful to the recipient. Information is therefore meaningful and significant in a particular context and is useful to support decision making in that context. An information system in an organization provides information useful to its members and clients. This information should help it operate more effectively. The system part of

“information system” represents a way of seeing the set of interacting components, such as people (e.g., systems analysts, business users, and line managers), information and communications technology (e.g., computer hardware devices, a user interface, communications networks, and the World Wide Web), and procedures (e.g., business processes and business rules for good project management). We can now define an information system.

An information system is a system that assembles, stores, processes, and delivers information relevant to an organization (or to society) in such a way that the information is accessible and useful to those who wish to use it, including managers, staff, clients, and citizens. An information system is a human activity (social) system that is supported by information and communications technology.

The information might concern an organization’s customers, suppliers, products, equipment, procedures, operations, and so on. Information systems in a bank, for example, might concern the payment of its employees, the operation of its customer accounts, or the efficient running of its branches. There is almost no activity in our daily life that has not been affected by information systems. Nowadays, information systems are normally reliant on ICT—that is, the hardware, software, and communications elements—but information systems are more than that. They are the combination of IT and its application in organizations, including human aspects (the users and other stakeholders) that make the technology into something applied and useful for the organization.

Think for a moment about communication, travel, banking, shopping, entertainment, education, privacy, security, and the like, and consider how in the last decade or two we have changed the way we deal with these or even perceive them because of the impact of information systems and information and communications technology. For example, the Internet has changed the way we think of shopping. It enables us to search, find, order, and pay for a product in a few minutes without having to leave the home or the office. Even enthusiasts for technology such as software engineers and systems designers did not expect so much progress in such a short time. It is now no longer a matter of whether you will adopt a new tool but when and how. Information systems pervade all aspects of life, at home as well as in the office, school, and hospital Athwall A. K. (2002).

2.6.1 TYPES OF INFORMATION SYSTEM

Information systems differ in their business needs. Also depending upon different levels in an organizations information systems differ. Three major information systems are

1. Transaction processing
2. Management information system
3. Decision support system

The information needs are different at different organizational levels. Accordingly the information can be categorized as: strategic information, managerial information and operational information.

Strategic information is the information needed by top most management for decision making. For example the trends in revenues earned by the organization are required by the top management for setting the policies of the organization. This information is not required by the lower levels in the organization. The information systems that provide these kinds of information are known as Decision Support Systems.

The second category of information required by the middle management is known as managerial information. The information required at this level is used for making short term decisions and plans for the organization. Management information system (MIS) caters to such information needs of the organization. Due to its capabilities to fulfill the managerial information needs of the organization, Management Information Systems have become a necessity for all big organizations. And due to its vastness, most of the big organizations have separate MIS departments to look into the related issues and proper functioning of the system.

The third category of information is relating to the daily or short term information needs of the organization such as attendance records of the employees. This kind of information is required at the operational level for carrying out the day-to-day operational activities. Due to its capabilities to provide information for processing transaction of the organization, the information system is known as Transaction Processing System or Data Processing System Athwall A. K. (2002).

2.7 MANAGEMENT INFORMATION SYSTEMS

These systems assist lower management in problem solving and making decisions. They use the results of transaction processing and some other information also. It is a set of information processing functions. It should handle queries as quickly as they arrive. An important element of MIS system is database.

A database is a non-redundant collection of interrelated data items that can be processed through application programs and available to many users Chester, F. (2002).

2.8 JUSTIFICATION OF THE STUDY

Currently, this Hospital does not use any kind of automated information system to assist in their daily operations, as is common in some Hospitals in developed countries. Hence, the best step is to introduce a computerized antenatal information system for this Hospital. The antenatal information needs a solution to the problem whereby data of clinical may be lost or misplaced, through the use of manual system. Hence there is need to computerized the manual system of keeping antenatal information.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

This chapter deals with the methodology adopted for the study, design and development of the application. Methodology can be the analysis of the principles of methods, rules and postulates employed by a discipline. It refers to the modus operandi that is a person's technique of handling a task. Research can be defined as the search for knowledge or any systematic investigation to establish facts. This section will outline the various methods to be used in all the stages of system analysis and design for the realization of an effective E-book sharing website System.

3.2 RESEARCH DESIGN AND METHODOLOGY

Research can simply be defined as the process of finding solution to a problem or testing hypothesis. Research design is a set of common techniques used to find or search for the meaning of an information about an existing system.

METHODOLOGY: is a set of organized steps used to collect data.

3.3 METHOD OF DATA COLLECTION

DATA COLLECTION: Is the process of gathering and measuring information on variable of interest, in an established systematic fashion that enables one to answer stated research questions, test hypothesis and evaluate outcomes.

The method of data collection instrument is as follows:-

- i) Questionnaire
- ii) Interview
- iii) Observation
- iv) Test
- v) Record investigation
- vi) use of database

1. QUESTIONNAIRE: Questionnaire may be used to collect regular or infrequent routine data, and data specialized studies while information in this section applies to questionnaire for all these uses. Some of the data obtain through questionnaire include demographic characteristics, fishing practices, general information. a researcher using questionnaire for data collection would need to assure himself/herself that the respondent.

- i) Understand question as the interviewer intends
- ii) Is the respondent willingly to provides answer or data
- iii) Is a competent source of data
- iv) Answer question in the form intended and with integrity.

The researcher should design the questionnaire to be as simple, clear and short as possible.

2. INTERVIEW: Interviews are obtained through inquiry and record by enumerators. Structured interviews are performed by using survey forms,

whereas open interview are notes taken while talking with respondent (face to face) an interview has the follow advantage over questionnaire.

- i) People are usually more willing to talk then write
- ii) The interviewer can explain and clarify issues of his investigation.
- iii) It is particular useful when dealing with, illiterate and these with language difficulties
- iv) Is possible to assess the mood, sincerity and integrity of the interview as he/she answer the question.

3. OBSERVATION: Observation is used to obtain direct information about certain situation, object and individual. It enables the researcher to see first-hand, the characteristics behavior of persons, object or situation he is interested in. observation may take any of these forms.

- i) Participate observation: is one in which the observer also participates in the activities or situation he is observing. The researchers may do this with either a hidden or a known identity
- ii) Non-participate observation:- is one in which researchers observe the situation without participate or becoming involved in it.

4. TEST: Tests are devices or instrument used to measure an individual performance, abilities or intelligence. These type of test commonly used.

- i) Achievement test:- these are test designed to measure the amount of learning that the learner has acquire in a given subjected matter

- ii) Aptitude test:- these are test that attempt to predict an individual capacity or potentials to perform
- iii) Personality test:- these are test designed to measure the personality traits of an individual therefore making it easier for us to fit into a personality group.

5. RECORD INVESTIGATION: In this method, reliable record can be studied any analyzed in order to reconstruct the existing information analyzing and organization relationship in the project.

6. USE OF DATABASE: Database is information that is set up for easy access, management and updating. Computer databases typically store aggregations of data records or files that contain information, such as patients records, customer data, financials and product information.

The methods used in collecting data for this project work are as follow:

- i) Interview method
- ii) Observation method
- iii) Record investigation method and

In this research, interview method was adopted for the collection of data from the case study.

3.4 ANALYSIS OF THE EXISTING INPUT

In analyzing the existing system, data and information of patients were gotten from the forms that were filled by the patients showing their medical condition or investigation needs. The information that comes with the form is listed below.

Form details:

- Patient's Name
- Patient's Address
- Patient's Phone Number
- Age
- Sex
- Surgical history
- Last Menstruation date
- Number of children
- Abortion history
- Checkup Scheduled date

3.5 FILE MAINTAINED

File is referred to as a collection of related records organized according to some specific characteristics the filing system maintained in the record unit of the hospital viz.

CLINICAL FILE: This file contained information about lab test as contained in the input form as well as detail of the investigation.

3.6 HUMAN ELEMENTS

Human elements involve the personnel working in the department. The Human element of antenatal information department of this Hospital and their responsibility based on the hierarchy are:

- (i) Lab Technologist: He is the one conducting the investigation base on the investigation required and specimen used.
- (ii) Record Officer: He assists the Technologist in recording the result of the findings.

3.7 EQUIPMENT REQUIREMENT

In order to effectively run the application, the following hardware and software requirements are required:

3.7.1 HARDWARE REQUIREMENT

For proper installation of the system, the following minimum hardware requirements are:

1. Color Monitor
2. 256MB Random Access Memory
3. 1 Gigabyte Hard Disk Drive
4. Keyboard
5. Mouse

3.7.2 SOFTWARE REQUIREMENT

The software requirements for the installation of the system are listed below:

1. Microsoft Windows XP or Higher
2. Microsoft .NET Framework 3.5 or Higher

3. Crystal Reports 10.5 or Higher
4. MS Access 2003 or Higher

3.8 PROGRAM SPECIFICATION

The program is written in modules and that gives it the structure it presents to the user when loaded by the system. It prompts for a use name and password, password are verified when an input has been entered access is granted to requester/user.

3.9 PROGRAM TESTING

The final step after the design of any system is implementation. Here, the written programs are tested to ensure that the output is in line with the aims and objectives of the system developed. The existing data are taken from the old system and converted to the new system. Comparison is carried out between the old (Manual) and the new (automated) record systems. After which the result of the automated system has been satisfied.

CHAPTER FOUR

NEW SYSTEM DESIGN AND IMPLEMENTATION

4.1 INTRODUCTION

The next step after the analysis of the system process is to design a new system that may work better than the previous system. This commences after the system analysis approval and its recommendation. Designing a system may require a careful study in establishing the specification for both the data to be processed by the computer and the program that instructs the computer on what to do.

4.2 NEW SYSTEM PROCEDURE

The new system procedure will explain the system from beginning of inputting data up to generating report as output, in other word it explains how data get into the record unit, how this data is process to yield information and finally how this information is made valuable and available.

4.3 NEW INPUT REQUIREMENTS

The new input requirements are clinical test form. The information required by the old system such as the following:

- Patient's Name
- Patient's Address
- Patient Phone Number
- Age
- Sex
- Surgical history

- Last Menstruation date
- Number of children
- Abortion history
- Checkup Scheduled date

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S/N	Patient name	Patient address	Patients phone No	Age	sex	Surgical history	Last menstruation date	Number of children	Abortion history	Checkup scheduled date
1	Victoria Douglas	No 16 Mr. Biggs road Opolo	09063346938	31	female	appendix	25 th December 2022	2	2 abortion	15 th Februarys 2013
2	HannahIpighansi	No. 5 Barath Road Biogbolo	07013738345	29	Female	None	1 st January 2023	1	none	2 nd January 2023
3	Jennifer Victor	No 2 Osomu Road Ekeki	08147783388	27	Female	None	19 th January 2023	2	None	29 th February 2023
4	Blessing Adam	No 4 New Heaven Road Azikoro	09034673530	35	Female	None	10 th June 2023	4	1 abortion	30 th September 2023
5	Ella Abel	No 3 Arugu's Compound Imiringi	08175672963	28	Female	Appendix	28 th August 2022	2	2 abortion	1 st January 2023
6	Praise Abadi	No 32 victory suite Onopa	08136672277	32	Female	None	30 th September 2022	3	None	14 th June 2023
7	Chinanza Louis	No 1 Amazing road Okaka	09066185271	31	Female	Appendix	13 th September 2022	5	None	1 st June 2023
8	Marianna Ogori	No 5 Imgbi road Amarata	09043562429	38	Female	None	30 th January 2022	1	1 abortion	15 th February 2023
9	Maryjane Anthony	No 5 Hamilton road Ekeki	09041145892	24	Female	Appendix	14 th January 2022	5	3 abortion	13 th April 2023
10	Nече William	No 20 hospital road Opolo	08165892784	36	None	None	14 th February 2022	3	None	12 th June 2022

4.4 CHOICE OF PROGRAMMING LANGUAGE USED

This software was developed using two basic application software which is Microsoft visual basic. Which was chosen due to the fact that is an event driven and object oriented programming language and also a graphical user interface, with Microsoft access is also chosen from the fact that it supports data Integrity and also flexible in structuring a database with tools such as query by example (QBE) and structure query language (SQL) it is also easy which combining it with other programming tools another major reason for chosen Microsoft access is most suitable for a computerized antenatal information system.

4.4.1 PHP (PHP: HYPERTEXT PREPROCESSOR)

PHP is a server-side scripting language designed for Web development. It runs on the server and generally cannot run on its own unless in response to an event. It is designed for use with HTML such that when invoked, it returns HTML to the browser. It provides more flexibility than HTML alone. It is platform independent, powerful, robust and scalable, web development specific. It can be object oriented, it has great documentation in different languages, and it has a large active developer community.

4.4.2 HTML (HYPER-TEXT MARKUP LANGUAGE)

HTML is a markup language for creating Web pages and other information that can be displayed on a Web browser. Since it was introduced, HTML has evolved through several versions, but version 5 is the latest version developed with a range of new features. Although these new features are included specifically for better programming, most of them are yet to be supported by most popular browsers. MySQL is a relational database management system (RDBMS) used to manipulate or manage data contained in a database. (Christopher 2004).

4.4.3 PROGRAM SPECIFICATION

This specifies in details, the requirement for writing the program. Thus it acts as a formal term of reference. It also, specifically handles the computation of incorrect password to other necessary data item that is typed into the generated question if there is incorrect data typed in this will also generate question demanding the accuracy or validity of the entire data displaying “Yes or correct the option link then next module and So otherwise it will only redisplay previous statement.

S/N	Input	Description	Number
1	Name	Character	50
2	Address	Alphanumeric	30
3	Phone number	Numeric	15
4	Age	Numeric	2
5	Sex	Character	6
6	Surgical history	Character	10
7	Last menstruation date	Alphanumeric	20
8	Number of children	Numeric	3
9	Abortion history	Alphanumeric	10
10	Checkup scheduled date	Alphanumeric	20

HTML (Hyper Text Markup Language): This is used to structure a web page and its content. The content could be structured within a set of paragraphs, a list of bulleted points or using images and data tables.

PHP (Hypertext Preprocessor): This handles and validates HTML forms and executes code loops in the program. Also variables and ordered and associative array can be managed.

SQL (Structure Query Language): It is designed for managing data held in a relational database management system (RDBMS).

QBE (Query By Example): It is used for inputting commands into a table-like conditions and example element. It is most notably for relational databases.

Visual Basic (VB): It is an event-driven programming language and environment from Microsoft that provides a graphical user interface (GUI) which allows programmers to modify code by simply dragging and dropping objects and defining their behavior and appearance.

4.4.4 PATIENT'S REGISTRATION FORM

Patient Registration Information

First name *

Middle name

Surname *

Age *

Sex *

Phone No *

State

Address

Welcome interface/Login Interface Patient Requirement

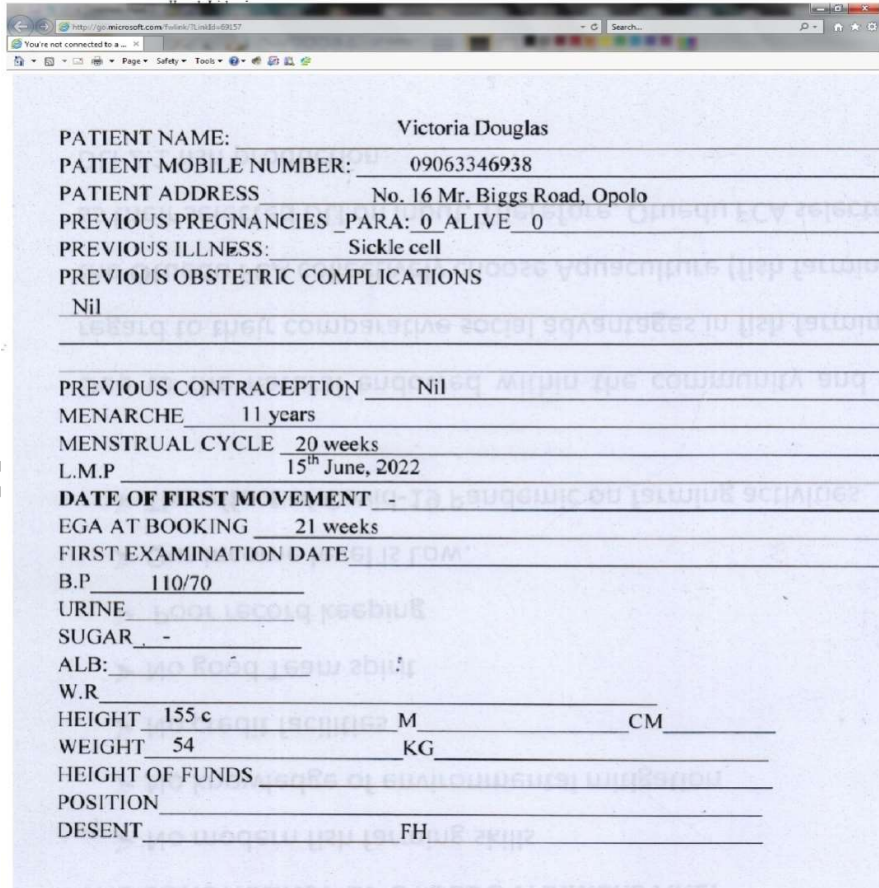
Patient ID *

Password *

Output Generation

4.5 PATIENTS MEDICAL REPORTS

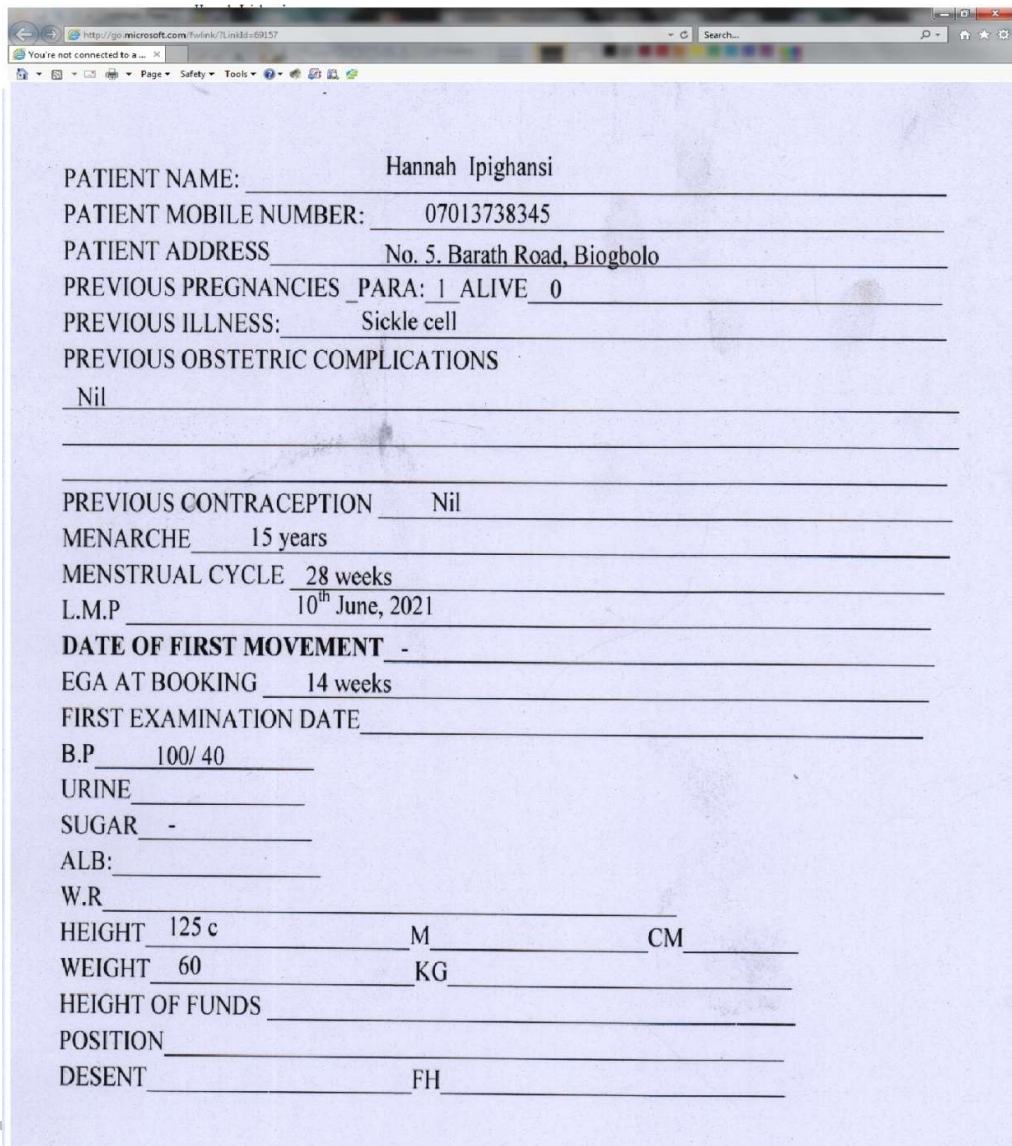
This contains the medical report of the patient after clinical tests and findings have been carried out. The volume of antenatal information forms and frequently use relates documents are considered in designing a system of antenatal information keeping procedure. The department has a vast amount of antenatal information which needs to be logical and sequential organized for as efficient output by the use of computer. Output refers to information expected at the end of certain period of time.



The image shows a screenshot of a web browser displaying a patient medical report form. The browser's address bar shows a URL starting with 'http://go.microsoft.com/fwlink/...', and the page title is 'You're not connected to a...'. The form contains the following information:

PATIENT NAME:	Victoria Douglas
PATIENT MOBILE NUMBER:	09063346938
PATIENT ADDRESS	No. 16 Mr. Biggs Road, Opolo
PREVIOUS PREGNANCIES	PARA: 0 ALIVE 0
PREVIOUS ILLNESS:	Sickle cell
PREVIOUS OBSTETRIC COMPLICATIONS	Nil
PREVIOUS CONTRACEPTION	Nil
MENARCHE	11 years
MENSTRUAL CYCLE	20 weeks
L.M.P	15 th June, 2022
DATE OF FIRST MOVEMENT	-
EGA AT BOOKING	21 weeks
FIRST EXAMINATION DATE	
B.P	110/70
URINE	
SUGAR	-
ALB:	
W.R	
HEIGHT	155 c M CM
WEIGHT	54 KG
HEIGHT OF FUNDS	
POSITION	
DESENT	FH

Figure 4.5.1 PATIENTS INFORMATIONS



The image shows a screenshot of a web browser window displaying a patient information form. The browser's address bar shows a URL starting with 'http://go.microsoft.com/'. The form is titled 'PATIENTS INFORMATIONS' and contains the following fields and values:

PATIENT NAME: Hannah Ipighansi
PATIENT MOBILE NUMBER: 07013738345
PATIENT ADDRESS No. 5. Barath Road, Biogbolo
PREVIOUS PREGNANCIES PARA: 1 ALIVE 0
PREVIOUS ILLNESS: Sickle cell
PREVIOUS OBSTETRIC COMPLICATIONS
Nil

PREVIOUS CONTRACEPTION Nil
MENARCHE 15 years
MENSTRUAL CYCLE 28 weeks
L.M.P 10th June, 2021
DATE OF FIRST MOVEMENT -
EGA AT BOOKING 14 weeks
FIRST EXAMINATION DATE _____
B.P 100/40
URINE _____
SUGAR -
ALB: _____
W.R _____
HEIGHT 125 c M CM _____
WEIGHT 60 KG _____
HEIGHT OF FUNDS _____
POSITION _____
DESENT _____ FH _____

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

The nature of hospitalization and antenatal make the creation, tracking, storage of antenatal information a crucial task. However, though hospitals spend tons of money in managing the records. It is still a tedious job to perform the administrative job and unexpected accidents that may occur which will cause the loss of important records. It raises up the need to design an automated, intelligent system which can both save the costing and work load of hospital staff, and at the same time provide a reliable and holistic records of antenatal patients. This project explained the detailed design flow and the cautious thinking on choosing the core elements used to implement the system. Various technologies like VB.Net and MS PowerPoint have been integrated into the user interface to make it user-friendly and easy to manage. In order to improve the cross platform capability, MS Access database had been chosen to perform the back-end data querying and storage.

5.2 CONCLUSION

Finally due to time limitations, the system is design to support the antenatal unit of the hospital. As the amount of antenatal information getting is larger, the system may not be capable. To improve the scalability of the system, the back-end system should support load-balancing features such that once there is a heavy

load, the system could be able to load balance between several records to increase the processing speed.

And also for further improvement, can add more functions such as extending the system to be visible in all offices, to include other unit of record department to make this Antenatal information System useful, more convenient and other required improvements.

5.3 RECOMMENDATION

Based on findings got and analyzed, the following recommendation is suggested.

1. Adequate trainee of the operation of the user is necessary to boast the efficiency of the business with respect to the system.
2. Simple basic program should be written to assist the information seekers (customers)

3. Though the system is expensive to maintain in terms personnel and equipment but the believe is that the cost will be less obviously the new system is poorly implemented.

As a result, the computer's peculiar features which are available tools and the long run benefit of the information technology. An efficient service through the introduction of the following could be taken into consideration.

Software should be checked for accuracy and appropriateness and both software and hardware should be protected from damages or corruption. Security measure should be applied to various computers and related equipment to safeguard them.

Finally, the researcher, wished to recommend that in future i.e. in no distant time the clinic should take into consideration the linking of their operation to the database and having a website of their own of easy and global access to their various authorized users the advertisement of their operation and many more.

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Catling, CJ; Medley, N; Foureur, M; Ryan, C; Leap, N; Teate, A; Homer, CS (4 February 2015). "Group versus conventional antenatal care for women". *The Cochrane Database of Systematic Reviews. 2 (2):*

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APPENDIX

Registrationpage

```
<html>
<divhospital="container">
<?php
include("includes/db_conn.php");
include("includes/header_template.php");
include("functions.php");?>
<ulid="navigation">
<li><a href="adminpage.php">Home</a></li>
<li><a href="patientsReg.php">Addpatient</a></li>
<li><a href="addAddress.php">addresse</a></li>
<li><a href="manual.php">patients</a></li>
<li><a href="generate test.php">Displayresult</a></li>
<li><a href="logout.php">Logout</a></li>
</ul>
<tableheight='300'width="100%">
<tr><?php$msg=$_GET['msg'];echo$msg;?>
<tdalign='top'style="width:58%;padding-left:10px;text-align:justify;font-
size:16px">
```

```

<br>
<div id="fade">




</div>
</td>
<td align="top" bgcolor="#efc" width="32%">
<div id="accordion" style="width:100%">
<div height="accordion-header"><span>Bulk Type of abortion history
</span></div>
<ul id="accordion-content">
<form method="billings" action="result_list.php">
<?php

$query="select distinct patients result order by test;
$result=mysql_query($query);
?><br>
<span>patients</span>:

<select name="patientid" id="sex">
<option value="">Select address
</option>

<?php
$i=0;
while($i<mysql_num_rows($urine test){
$abortion histry=mysql_weight($result,$i,number of children;
echo"<option value='$state'>$blood. pressure</option>";

```

```

$i++;
}
?></select>
<p><button type="submit" name="Assign" style="margin-left: 124px; font-weight: bold">Assign</button>
</form></ul>
<div sex="accordion-header">
Abortion history:
</div>
<ul>
<li><a href="#">patients first name</a></li>
<li><a href="#">patients middle name</a></li>
<li><a href="#">patients surname</a></li>
</ul>
<div address="accordion-header"><span></span></div>
</div>
</td></tr>
</table>
<?php include("includes/footer_template.php")?>
</div>

```

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