UNIVERSITY OF MALAWI

KAMUZU COLLEGE OF NURSING

DESCRIPTION OF THE EFFECTIVENESS OF STANDARD CASE MANAGEMENT OF UNDERFIVE CHILDREN WITH PNEUMONIA TOWARDS CLIENTS OUTCOME AT KASUNGU DISTRICT HOSPITAL

A DISSERTATION SUBMITTED TO THE FACULTY OF NURSING IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE BACHELOR OF SCIENCE DEGREE IN NURSING

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DECEMBER, 2009

DECLARATION

I hereby declare that this research dissertation is a result of my own work and has not been presented for any degree and is not currently being presented for any other degree

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DEDICATION

This dissertation is dedicated to my husband Alexander Kudya for his love, patience and support during a such busy time. My two sons, Innocent and Diamond for understanding during the past two years that I have been at school. The missed motherly love and care.

ACKNOWLEDGEMENT

First and fore most, I would like to thank God Almighty for keeping me healthy throughout my academic period.

I would also like to express my sincere gratitude to my supervisor, Mrs. E Chilemba for great support, guidance and constructive comments throughout the period of research dissertation.

I would like to thank my husband, Mr. Alexander Kudya for the support, patience and care he rendered during the time I was busy at school.Similary my two sons Innocent and Diamond, their patience contributed a lot.

I am also grateful to the Library staff that assisted me with internet, journals and books from which I obtained most of the information that has been included in this research.

ABSTRACT

A quantitative study was designed to investigate the effectiveness of standard case management of pneumonia in under five children at Kasungu district hospital. The purpose of the study was to explore the effectiveness of the standard case management as a strategy. The objectives of the study were to assess the effectiveness and to describe the treatment results. Secondary data was used from clients files those that were admitted due to severe and very severe pneumonia from January to December 2008. Systematic sampling was used to sample 50 files from total files of 992 records of children once admitted with pneumonia from January to December 2008. The questionnaire was used to collect the information retrospectively. Data was analyzed manually and findings were presented in graphs, pie charts, tables and percentages. The study has reveled that the standard case management is not effective as shown by increased number of deaths, out come unknown and decreased number of those completed treatment. It has also reveled that participants were not checked vital signs on daily basis. The researcher recommends that health workers should be trained in standard case management and health talks to be targeted to parents or care givers of children of 2 -11 months old.

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LIST OF ABBREVIATIONS

ARI:	Acute Respiratory Infections
CFR:	Case Fatality Rate
DHO:	District Health Officer
IMCI:	Integrated Childhood Illness
SCM:	Standard Case Management
UNICEF:	United Nations International Children's Fund
WHO:	World Health Organization

OPERATIONAL DEFINITION

Belief:	The feeling that something is true or definitely exists
Caretaker:	Someone whose job is to look after other people
Culture:	Is the belief, way of life, art and customs that are shared and accepted by people is a particular society
Input:	These are variables that are in the system like age patients, information
Morbidity:	Is the incidence or prevalence of a disease or off all diseases in a population
Mortality:	Is the ratio of death in an area to the population of that area; expressed by 1,000 per year
Outcome Unknown:	Not coming for follow-up care after completion of treatment
Output:	Is the outcome of the input and through put
Treatment Failure:	Worsening of fast breathing or worsening of chest in drawing or development of danger signs
Through put:	Is the process an action by means of which systems converts input with energy into product
Under five:	A child who is below five years of age

Standard Case Management: The first stage of process involves assessing a Child with cough or difficult breathing and subsequently classifying then according to severity of the condition. The second stage involves giving the child appropriate treatment and supportive care according to severity and age.

CHAPTER ONE

1.1 INTRODUCTION

Pneumonia is the infection of the lung tissue caused by bacteria and virus (Stanfield, 1994). It affects individuals of all ages but it is very common in under five children and elderly. In small children, there is increased susceptibility in low antibody level due to lack of exposure and immature system with a particular deficit response to 1gG2 (Stan field, 1994). Then this immature system puts them at risk of contracting infections.

Patient's outcome in under five children is of at most importance to combat the high mortality and morbidity rates resulting from pneumonia. Pneumonia is the second major causes of morbidity and mortality rate in Malawi, Case fatality rate was 10% according to ARI Annual Review of 2005. In response to this, WHO introduced to standard case management strategy to manage children.

Kasungu district hospital has been observed that children come back critically ill after early discharge. Therefore the researcher wants to explore the effectiveness of the standard case management towards client's outcome in under five children with pneumonia.

1.2 BACKGROUND

Pneumonia is the leading cause of deaths and morbidity in many developing countries including Malawi, occurring about two million deaths per year (htt://clinicaltrials.gov/ct2/stool). It is because of poor living conditions, pollution of air, poor nutrition for example living in a house without good ventilation, putting tobacco in side the house without good ventilation, or parent smoking tobacco and not gets nutritious food respectively.

In Malawi, twenty five districts and eleven CHAM hospitals were introduced to this type of strategy, the standard case management. The standard case management guidelines use correct assessing, classifying, appropriate treatment and discharge plan as basic elements for managing pneumonia.

Then the standard case management of pneumonia came into existence because of high mortality rate. SCM is the standard guideline introduced by WHO to reduce the case fatality rate in underfive children cause by pneumonia. It has got eight components and these are general assessment of the child or young infants, correct classification of a child with cough or difficult breathing, differential diagnosis, appropriate treatment according to severity and type of pneumonia, providing supportive care, monitoring child's progress and counselling and finally, discharge plan to the care taker of a sick child. All these components aid at good desired outcome. The out come of SCM are treatment completion which should be 85% and above, death within and after 24 hours is 6% and below according to national target ARI Program of 2007, Left against advice below 10%, and treatment failures and outcome unknown is below 5% (Participant manual 2000).

Pneumonia being the major killer of underfive children in the world especially in developing countries. Studies done by Pio Antinio (2003) showed that the incidence of pneumonia in developing countries was high 10-20 per 100 than in developed countries which was 2-4 per 100, however the incidence exceeding 50 per 100 have been reached in settings with prevalence of malnutrition and high HIV infection rate in children.

According to studies done by International Centre for Diarrhoeal Disease Research (1986-88) in Bangladesh showed that the most causative organisms of pneumonia in underfive children in developed countries were streptococcus pneumonia and hemophilus influenza. 401 children with pneumonia, 14% of case fatality rate was due to these causative organisms and 3% CFR was virus. The bacterial was treated with inexpensive antibiotics of which poor countries can afford.

WHO launched a program for control of ARI with major objective to reduce the child mortality and promote rational use of antibiotics depending on the clinical presentations of the child suffering from pneumonia. This was done at Papau New Guinea. Shan F. 1992 published a paper that became a corner stone of the current case management strategy for control of ARI especially pneumonia. The paper had clinical presentation of pneumonia and where a child needs intensive antibiotic or not. This was a simple protocol which the health workers could be trained and able to use in managing sick children. It was accepted by many health professionals.

Then in 1994, SCM was recommended by WHO and UNICEF to be adopted by ARI programs in 130 developing countries. WHO integrated ARI guidelines into IMCI. By 2000 IMCI was adopted by 81 countries where Malawi was inclusive. IMCI is implemented at first level. Malawi has got twenty-five and eleven CHAM hospitals where standard case management is being implemented. In 2000 SCM through ARI program was introduced by Child Long Health Project because of poor health indicators such as infant and underfive mortality which were 104/1000 and 189/1000 live birth respectively. The case fatality rate of pneumonia was 23%. The other reason for introduction was inadequate capacity to manage severe pneumonia at district level. The aim of project to introduce the SCM was to reduce the mortality among paediatrics from pneumonia by maximising benefits of standard case management.

Kasungu district hospital has been observed that children come back critically ill after discharge on oral antibiotics.

1.3 PROBLEM STATEMENT

Patient's outcomes determine the level or standard of care that patients receive in any health care setting. The introduction of standard case manage of pneumonia in underfive children was done with the goal of reducing mortality and morbidity rates. Observations reflect that after discharging, children come back in critical conditions and most of them die. This is questionable in terms of its effectiveness of

the standard case management as a method or guideline of treating severe pneumonia as well as very severe pneumonia. Therefore, the study seeks to describe effectiveness of standard case management in underfive children with pneumonia.

1.4 SIGNIFICANCE OF THE STUDY

The results obtained for this study was to assist the district management team in collaboration with in-charges of underfive department to initiate underfive death audit. Also to come up with a policy on standard case management at district level. The results will also help the management team to come up with strategy on how to improve on the outcome unknown.

1.5 OBJECTIVES

1.5.1 Broad Objectives

To explore the effectiveness of the standard case management of pneumonia in underfive children towards clients outcome at Kasungu District Hospital.

1.5.2 Specific Objectives

a. To assess effectiveness of the standard case management of pneumonia.
b. To identify challenges of standard case management of pneumonia in underfive children.
c. To describe treatment results.

CHAPTER TWO

2.1 LITERATURE REVIEW

Literature review is the summary of relevant literature (information) on research problem. The major purpose of literature review is to ascertain what is already known in relation to the problem of interest (Polit and Hungler 1991). The scope of literature review ranges from studies done out of Africa, then those done in Africa as well as those done in Malawi. In Malawi there are not really research which have been done but only annual reviews.

2.2 INFORMATION AND RELATED STUDIES

2.2.1 Knowledge and Trainings

According to WHO guidelines of standard case management approach of pneumonia, children are critically identified as having pneumonia or not. The severity of the pneumonia classified and treatment appropriate to the degree of severity provided. The guidelines recommended cough or difficulties in breathing as entry criteria - for a diagnosis of pneumonia. The fast breathing will also depend on the age of the child or infant. An infant is 60b/minute or more. A chilled aged 2 months to eleven months is 50b/minute a more and 12 months to 59 months is 40/min or more.

Children with cough or difficulty in breathing and chest in drawing are considered to have severe pneumonia. Presence of danger signs specifically central cynosis or severe respiratory distress or inability to drink in a child with cough or difficulties in breathing is classified as very severe pneumonia. The treatment is given according to the severity of the pneumonia (Participant Manual 2000).

In a study done by Chakraborly, S. and Frick, K. (2002) is rural West Bengal, India on factors influencing private health providers technological quality of care for acute respiratory infection among underfive children WHO guidelines for ARI case management were used as expected standard of care. It was reported that the

health providers had inadequate technical quality of care due lack of knowledge and patient load. They were being given incentives after seeing many patients. The study concluded that to bring about sustainable improvements in private providers ARI disease management practices, training program and interventions that improved compliances were necessary.

2.2.2 Outcome

A study done at Sweden by Wahlstrom, R. et al (2003) on effectiveness of feedback improving case management of malaria, diarrhoea and pneumonia at provincial hospital in LAO PDR revealed that the aggregated mean scores for all diseases malaria, diarrhoea and pneumonia has improved significantly. For malaria was improvement in recording patient's history and in frequency of microscopy testing. For diarrhoea, regarding weight measurements, palpation of fontanel for children under 2 years and reduction of irrational use of anti diarrhoea and antibiotics; for pneumonia, in recording respiratory count and reducing irrational use of antihistamines and anti cough medications. It concluded that audit feedback system to improve quality of care is feasible and effective also in hospital settings in low - income countries such as Malawi.

A study done in Uruguay by Pirez, M. etal (1997-98) in hospitalised children using standard case management of pneumonia by use of penicillin and derivates (Amecycillin and Ampicillin) and macrolides. For recommended days the decision to treatment and antibiotics were based on radiological findings. It revealed that compliance with the standard case management was highly satisfactory outcome of children treated with penicillin and derivates was good.

2.2.3 Resources

In a study done by Hasan Ashraf at Bangladesh on randomized controlled al (RCT). The number of beds in the hospital was inadequate for admission of all pneumonia cases that require hospitalisation then they provided institutional care those children who cannot be hospitalised due to bed constraints at day care centres - at Radda clinic. These children enrolled in Day Care were provided with appropriate

antibiotics and supportive care at the clinic from 8am to 5pm. The results showed that this model was effective 251 children enrolled, 80% according to WHO had severe pneumonia and 20% had very severe pneumonia the mean duration of clinic stay was (712) days. 234 (93%) completed the study successfully without problems. 11 (44%) referred to hospitals because of the complications. No death reported at the clinic stay. The study was effective.

This can also apply to Kasungu district hospital where space is inadequate for hospitalised children instead of discharging children after two days on IM or IV antibiotics can be referred to day care-centres.

2.2.4 Knowledge

Mumbarak AL Renas Fordlallah (2006) did a cross section study on pneumonia case management in underfive children in Khartoum, Sudan. The survey was to describe the health care that children underfive receive before reaching a first referral hospital and the case management they receive when admitted as in-patients. Children were between 2 months and 5 years admitted in any of 3 referral hospitals. 224 children enrolled. One of the 3 hospitals was the care provider at which 61% of the care takers sought care at first. 30% of care takers bypass a health centre or another hospital within 5 km of their homes. In a 1/3 of those unavailability of services at facilities by passed was the reason stated. Of the children reaching hospitals after being referred from other facilities. Pneumonia constituted 38%. The findings were incomplete assessment, lead to 90% of the children to have inadequate classification and to discrepancy between classification and treatment. Monitoring of children's progress was inadequate. The researcher suggested that areas to improve SCM include training of health workers on assessment, classification, inpatient treatment and monitoring, in addition to complete recording of findings.

Nicholas D. Water and Lyino T. did a study on investigating the reasons why the first level health workers fail to follow guidelines for the integrated management of childhood illness in severely ill children at Republic of Tanzania. A retrospective and

perspective case reviews of severely ill children aged less than 5 years were conducted at health facilities in 4 districts. 502 cases were reviewed at 62 facilities. Treatment with antimalarials and antibiotics was consistent with diagnosis given by health workers. However 240 children classified as very severe febrile disease, none receive all IMCI recommended therapies and only 25% severely ill were referred.

91% of the health workers indicated that certain conditions can be managed without referral. The three reasons for not adhering to IMC guidelines were use of single, narrow diagnoses rather that IMCI classification. They belief that chloramphenicol is unacceptable toxic and lastly, perception was that referring ill child is often not necessary. It also shows that health workers were also lacking knowledge on the guidelines.

2.3 REVIEW DONE IN MALAWI

Training

A study done by Enarson P. etal (2002) on implementation of an oxygen contractor system Malawi. This was done after seeing that the children were dying from pneumonia due to hypoxemia. It was observed that health workers were not able to use the oxygen and how much to give to the children of various years. It was concluded that health workers should be trained in use of oxygen concentrators.

A review done by Technical Advisory team from the International Union against Tuberculosis and Lung disease (2005) in 6 districts of southern region of Malawi. These districts were Mangochi, Machinga, Thyolo, Mulanje, Mwanza and Chiradzulu . The review was to evaluate the progress made in strengthening of child lung health project/IMCI, particularly in terms of case management of pneumonia and management structure. The findings revealed that all 6 districts were not meeting the WHO recommendation of minimum hospital stay of four days. The average length stay of the six districts ranged from 2-9 - 3-9 days.
The infants were under treated given getamycin 5mg/kg instead of 7.5mg/kg and benzyl/ penicillin twice instead of four times daily and gentamycin not given for all

eight days and patients discharged on Amoxicillin done. In Chiradzulu SCM was not followed unauthorized drugs were used with inadequate treatment and discharge plan. These showed that health workers were lacking knowledge on SCM of pneumonia.

Death was the treatment outcome among the six districts hospital Mwanza. Mangochi and Machinga had highest case fatality rate of above 13% which was above the target case fatality of $\leq$ 10% of 2005.

In most districts health workers working in paediatric ward and underfive clinic had not received training of SCM.

The team recommended that the ARI program manager to provide formal annual training courses for personnel working in paediatric services. There should also supportive supervision.

In annual report 2007/08 done by ARI team from CHSU. The report was for 25 district and eleven CHAM hospitals in Malawi. The report revealed the outcome of the standard case management of pneumonia. On treatment completion; 20 hospitals were above 85%, 6 hospitals were below 75% where kasungu was inclusive and 10 hospitals were between 75% and 85%. The WHO target completed treatment is above 85% and the child should be well.

Left against Advice

In all 36 hospitals 2.5% (397) had left the hospital against medical advice. The highest number of left against advice was 59 (15.8%) in Kasungu followed by Balaka 53 (14.2%) this has attributed to small space in Balaka however Kasungu showed a slight decrease than 2006/07 due to introduction of new ward.

Outcome Unknown

Of all pneumonia admissions in 36 hospitals, 996 (6.2% did not return for follow-up care. Most of the hospitals had the outcome unknown result of less than 5%, but Kasungu, Zomba Central and Mchinji hospitals had the outcome unknown above 10%. Case fatality rate of the hospitals was 6.3%, showed a slight increase over last years 5.6%. The highest was recorded in Mangochi 13.5% and the lowest Ntcheu. 31 hospitals had their case fatality below 10%. Patients admitted with pneumonia the number increased in all hospitals. The team came up with challenges and constraints that there is lack of commitment by most DHOs to implement ARI activities.

The team suggested that the DHOs and DNOs should ensure that health workers trained in ARI case management are allocated to the children's department so that they practice what they have learnt. In cases where most ARI trained health workers have left they practice what they have learnt.

SUMMARY

For standard case management to be effective there is need for the health workers working in paediatric ward to be trained in SCM. This knowledge and skills will help them to counsel the care takers on compliance.

CHAPTER THREE

3.0 CONCEPTUAL FRAMEWORK

3.1 INTRODUCTION

Conceptual framework deals with abstractions (concepts) that are ascended by virtue of their relevance to a common theme. (Polit and Becker 2008). In quantative study concepts are referred to as variables. Variable is something that varies for example age, weight, therefore these variables varies from one person to person.

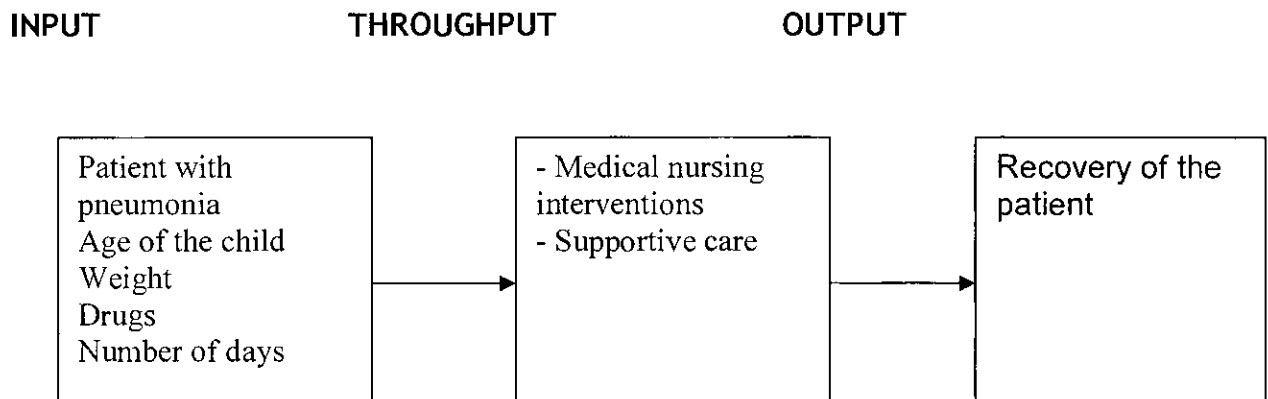
3.2 SYSTEMS THEORY

The theoretical framework used in this study is system theory. It attempts to explain productivity in terms of unifying whole as opposed to series of unrelated parts (Booyens 2001) system is a set of interrelated and interdependent parts designed to achieve a goal and set goals. (Booyens 2001). It consists of three major parts, and these are input, throughput and output.

Input is something put into system to achieve a result or outcome. The system is the hospital and the input is the resources like human, material information.

Through put is the work process to produce the product such as medical treatment of pneumonia, nursing intervention, immunization. The output is the information produced by a system or process from a specific input after running an entire process (Swanburg, 1996). It is the outcome of work like recovery of the patients.

CONCEPTUAL FRAME WORK DIAGRAM (MODIFIED)



The system approach (adapted from Hellriegel and Slocum [1989:61] as sited by Booyens [2001])

3.3 APPLICATION OF THE STUDY

The use of the system theory to this study. The system is the standard case management guidelines which require the input such as patient with pneumonia, days of hospitalisation drugs, and age of child weight to be in the system. These inputs will be used in the throughout which is the process of managing the children with pneumonia. These children were being given treatments such as intravenous or intramuscular antibiotics to treat the infection for two days instead of complete 7 days. There is also supporting care some through nursing interventions to promote the client outcome which is the recovery. This is the output. The output determines the input and the throughput. Therefore, to have good desired outcome there is need to use input and throughput effectively. For example, caretakers were supposed to be counselled on how to give oral drugs at home. They were also being counselled on importance of follow-up. Out come or out put reflects the treatment results of children with pneumonia.

According to Booyens, (2001) said that to operate effectively, there must be a feedback to provide information on the status and performance of the system. For the system of standard case management is effective there is need to follow its

guidelines that are through assessment, clarification and appropriate treatment. There is need to asses if there is need for collection of the throughput. This is why it is necessary to keep statistics and conduct patient's satisfaction survey.

As nurses, there is need to carry out nursing intervention according to the standards. There is also need to focus on supervision of the guidelines so as to ensure that clients are getting quality care.

For the system to be effective, the management team should make sure that all the health workers at an institution have knowledge of the system.

CHAPTER 4

4.0 METHODOLOGY

4.1 INTRODUCTION

This chapter discusses the design that was be used to collect data from selected secondary data. It also highlighted the study population, sampling method, sample size, plan for data collection and data analysis.

4.2 RESEARCH DESIGN

Research design is the overall plan for obtaining answers to the questions being studied and for handling some of the difficulties encountered during the research process (Polit & Beck, 2008). It describes how, when and where data will be collected and analyzed. It also guides the researcher in planning and implementation of the study in order to achieve the intended goal. This study used the descriptive quantitative research. Quantitative research is formal, objective systematic process in which numerical data are utilized to obtain information about the world (Groove and Burns, 2001). Descriptive research answer the question who, where or how. It dealt with everything that was counted and studied, for example, in the study there was counting of number of files from medical records by focusing on the variables or factors such as age, sex, diagnosis and treatment. It also helped to provide knowledge base when little was known.

4.3 STUDY POPULATION

Population is all elements (individuals, objects substance) that meet certain criteria for inclusion in a given universe (Groove and Burns, 2001). To this study the population was pneumonia patients of under-five year's old age. According to Polit and Beck (2004), population refers to the entire set of individuals (or objects) having some common characteristics. Therefore the population studied was from

secondary data of under-five children once admitted with pneumonia in thee year 2008.

4.4 SAMPLING

Sampling is the process of selecting population to represent the entire population (Polit and Beck, 2004). According Burns and Groove (2001), sampling is a process of selecting subjects who are representative of the population being studied. In this study, systematic sampling was used because every 16th file of pneumonia patient was being selected from 792 files of pneumonia. 50 pneumonia cards were being selected from January to December 2008.

4.5 SETTING

Setting refers to location for conducting research such as natural, partially control or highly controlled setting (Burns and Groove, 2001). According to Polit and Beck (2004), settings are the more specific places where data collection occurs.

The study was conducted at Kasungu District Hospital at pediatric clerical office where the medical records of pneumonia are kept. Kasungu District Hospital is in the Central region of Malawi in Kasungu District along the main road (MI).

4.6 PLANS FOR DATA COLLECTION

According to Polit and Beck (2004), data collection is the gathering of information to address a research problem. Data collection is also defined as the precise, systematic gathering of information relevant to the research purpose or the specific objectives, questions or hypotheses of a study (Burns and Grooves, 2001). Prior to data collection a structured questionnaire was designed to collect secondary data retrospectively. The design or tool had demographic data excluding the names, for details see (Appendix A). The questionnaire had closed ended questions where the researcher was just feeling the blank spaces. Data collection was carried at KDH.

The data collection was planned took three days. The tool was adopted from under five pneumonia card

PILOT STUDY

Pilot study is a small scale version or trial run, done in preparation of major study. The purpose is to investigate its feasibility of the study and defect any possible errors in data collection (Polit and Beck, 2004). Pilot study enabled the researcher to make informed changes in the sequence before main data collection. The pilot was done on 3 case files of 2007 at KDH. Some questions were deleted and others were added to help in collecting the necessary data for the study. The findings of the pilot study were not included in the main study.

4.7 PLAN FOR DATA ANALYSIS

Data collected was being analyzed manually using descriptive statistics because it was cheap. After data gathering, it will be grouped according to the variables, for example, age of pneumonia patients.
Tables, graphs, pie charts were used to portray the findings of the study. Gender of the respondent was reflected in bar charts, age in graph form, treatment results were presented in graphs.

4.8 ETHICAL CONSIDERATION

The research study was supposed to conform to moral and legal standards. Letters for permission to conduct this study were written to the research committee and the District Health Officer for Kasungu. The names of the patients were not written on the questionnaire to maintain confidentiality. Instead the serial numbers were used. The survey was done after seeking permission from the Research Committee of Kamuzu College of Nursing. Then the DHO of Kasungu also approved the letter for allowing conducting the research at the hospital and then the Pediatric ward in-charge and ward clerk were informed by the DHO about the research.

CHAPTER FIVE

DATA ANALYSIS

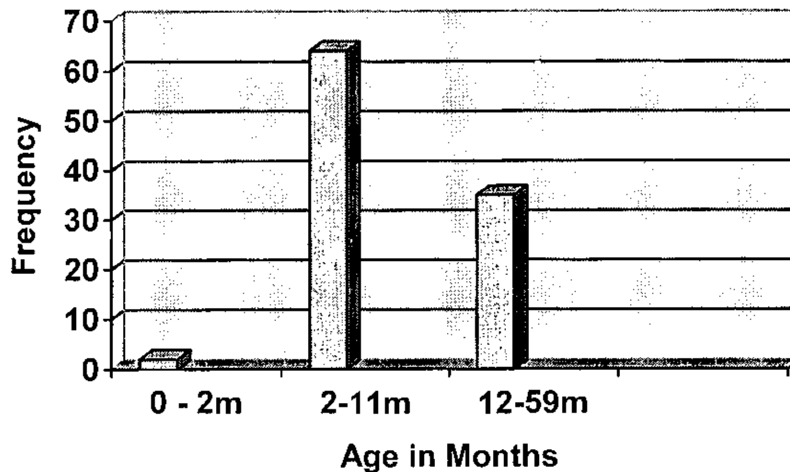
This chapter presents the study findings. The findings will be analysed using tables, bar graphs, percentages.

5.1 DEMOGRAPHIC DATA

The demographic data comprises of age, gender weight and height.

5.1.1 AGE

100% (n=50) participants reviewed their ages ranged from zero to five years. The figure below depicts the picture.

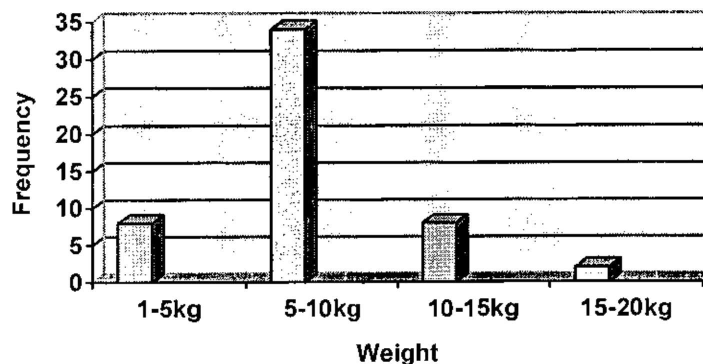


It has revealed that 64% of these children were at risk because at the age group of 2 to 11months, the reason might be infants immunity is immature instead they depend from their mothers. The other reason could be at this period most of the infants are introduced to foods in addition to breast milk. Then the food could be

not nutritious hence lowering the immunity of the child and risking the child to pneumonia attack. It is also this age group, that most babies are carried by their mothers at their back when they go to tobacco farm. Then infant may inhale polluted air and results to pneumonia attack.

5.1.3 WEIGHT

Weight of the participants varies from 1 to 20 kg. The figure below depicts weight ranges and its frequencies.



From the figure above in the weight range of 5-10 kg had many participants. It is because during the first year of life the infants grow fast, the weight doubles because all the physiological processes are growing. For example the head increases in size which could add to the weight gain of the infant.

As the weight was increasing from 10kg to 20 kg, the number of participants were decreasing as seen in figure3.

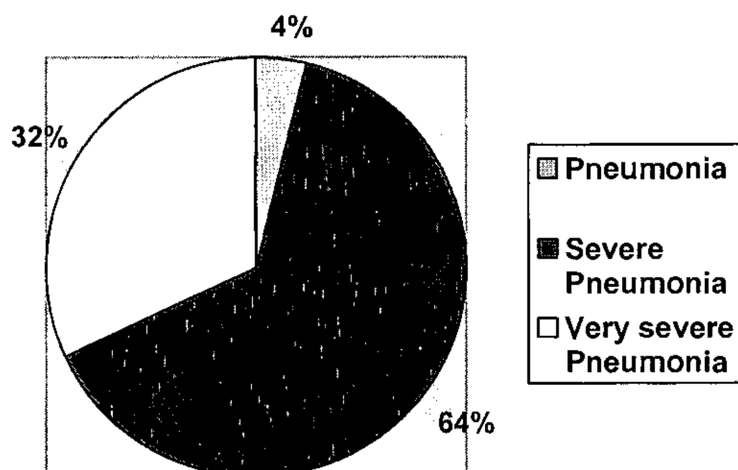
5.1.4 HEIGHT

Heights of the children were not recorded hence it was difficult to determined it because it was retrospectively done.

5.2 SEVERITY OF CLINICAL MANIFESTATIONS

In standard case management guideline approach. Pneumonia is classified according to clinical manifestations. The pie chart below shows the frequency distribution of clinical manifestation of pneumonia.

Pie Chart showing Distribution of Pneumonia



From the figure above severe pneumonia attacked 2/3 of the participants, and seconded by the very severe pneumonia which was about 1/3. In non-severe pneumonia had very few cases of 4 % because these patients were admitted because of other conditions like malaria.

It was also shown that some of the children were misclassified and mistreated. Some children who were having clinical signs of severe pneumonia were classified as very severe pneumonia and vice versa. Then they were mistreated.

20% (n=10) were misclassified and mistreated and 80% were correctly classified and given correct treatment. The misclassification might come due to some of the health workers working at under five clinic or pediatric ward not having knowledge on management of standard case management of pneumonia.

5.3. ADMISSION TIMES OF THE PARTICIPANTS

The study findings revealed in the figure below indicates the number of times the children were admitted with the same condition of pneumonia

Admission times	Frequency	Percentage
First admission	23	46%
Readmission	21	42%
Not indicated	6	12%

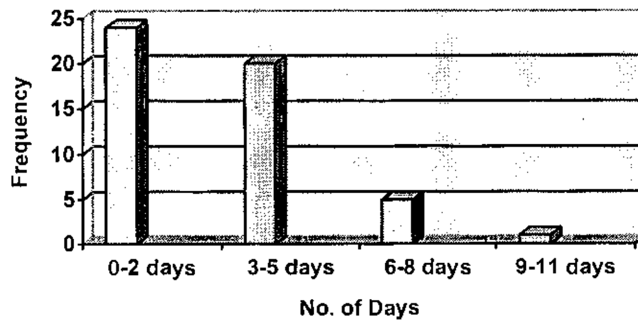
42% of the participants readmitted with pneumonia. And about 20% of the readmitted children came in critically ill and were classified as very severe pneumonia. The reason contributing to readmission might be the care takers or guardians not giving oral drugs effectively to their children.

12% not indicated a recorded on either this symbolizes that health workers were not committed to their duties.

5.4. HOSPITAL DAYS THE PARTICIPANT STAYED

Duration of stay in the hospital by the participants varied as shown in the figure below.

Bar graph showing hospital stay and its frequency



Normally when a child is admitted with a condition which needs antibiotics, is given number of days to be on antibiotics. According to WHO guideline of SCM of pneumonia, the child is supposed to have minimum day of three to four days and then got discharged on oral antibiotics. If is coming from far away should finish the treatment. According to the graph above about 50% of the participants, had short stay in the hospital of between 0-2 days this is not recommended. The reasons contributed to this short stay might be lack of knowledge on how to manage the pneumonia cases.

5.5. COMMENCEMENT OF ORAL ANTIBIOTICS

The data revealed that the participants were commenced to oral antibiotics on various number of days as depicted from the table below.

Number of days	Frequency	Percentage
0-2 days	20	40%
3-5 days	18	36%
6-8 days	3	6%
Not shifted	9	18%

When the child is admitted with severe or very severe pneumonia is commenced on intravenous or intramuscular drugs for quick action.If the child improves is switched

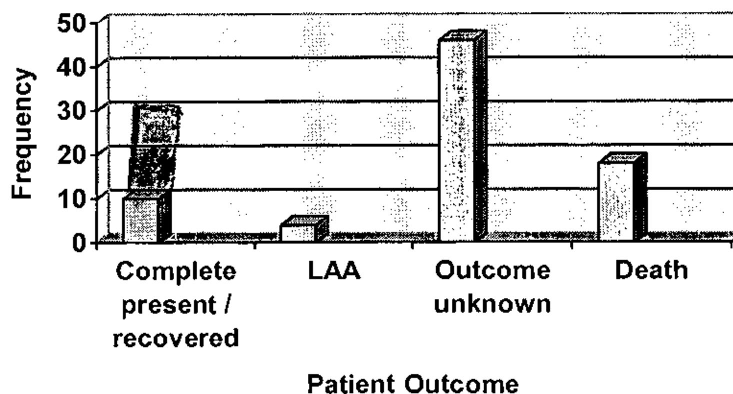
to oral antibiotics of the same family. The recommended minimum number of days is three to four days. According to results above 40% of the participants were changed to oral antibiotics after short stay on IV or IM drugs. Changing to oral drugs resulted to early discharge of the participants by the health workers seeing that if one has shifted to oral drugs it means has improved. 6% of the participants over stayed in the hospital because one was young infant who is supposed to finish drug while in hospital and others were referred from health centres.

Then 18% of the participants did not get oral antibiotics because they died before changing to oral drug.

5.6. TREAMENT RESULTS

The bar graph below shows the patients outcome after implementation of the standard case management guideline at the hospital.

Bar Graph Showing Participants Outcome



(i) Completed completed treatment or recovered

As shown from the bar graph above in figure. The children who completed treatment and recovered were 30%, this was below WHO target of above 85%. This might be some children did not come up for follow up and other absconded while in the hospital.

(ii) Outcome Unknown

These were the participants who were discharged on oral antibiotics two did not come for follow up were to be reviewed.

46% of the participants did not come for follow up care after discharge. This was a big number than what WHO recommends of not more than 5%. The reason could be the care takers not being counseled for follow up care or the care takers not seeing the value of coming for follow up if he or she sees that the child if fine.

(iii) Deaths

Case fatality rate for the children died of pneumonia among 50 participants was 18%. These children died before and after 24 hours of admission. Those died within 24 hours of admission were 10% and those died after 24 hours were 8%. The contributing reason for deaths could be late reporting to hospital or associated conditions like HIV, malnutrition and malaria.

There is least number of participants 6% who absconded from the hospital after their children shifted to oral antibiotics.

5.7 SUMMARY OF FINDINGS

The findings show that the most affected age group among the pneumonia under five children was between 2-11 months which had 64%. This age group is affected by all the two classification of pneumonia. Due to this age being prone to this infection it has shown that many deaths were from this age group about 18% of death. The participants were discharged early with 1-2 days were 48%.

The participants were shifted early to oral antibiotics which made the health workers to discharge these children early. It has also revealed that despite being discharged early were coming back to the hospital and critically ill as being shown from readmission. This might mean that parents were not giving oral antibiotic effectively. Almost half of the participants did not come back for follow up care after being discharged 46%. There were also 18% of deaths died before and after 24 hours admission. Finally health workers do not finish documenting the yellow card of the participants because other data was missing from the yellow card such as HIV status which was there but not indicated.

CHAPTER SIX

6.0 DISCUSSION

Introduction

This chapter presents the discussion of the study findings. Various literatures were used to support the findings and related discussions.

The heading under discussion will be demographic data, severity of clinical manifestation, duration of hospitalization, commencement of oral antibiotics and treatment result.

6.1: Demographic data

6.1.1: Age

The findings of the study showed that 64% of participants mostly affected with pneumonia were in the age of 2 - 11 months. This may mean that their immunity is immature; during this period most of the children are introduced to inadequate nutritious food which leads to low immunity and risk them to infections.

These findings agree with Turner (1987) as he did a study on impact of breast feeding on pneumonia and found that 40% were infants of 2 - 11 months more infected with pneumonia. The reason was that these infants were early weaned to solid foods which were not nutritious. In the Malawi demographics and health survey (2001) showed that the prevalence of the respiratory illness varies according to age with the highest prevalence at 6 - 11 months. Also to concur with Mphande's study (2004) showed that 76.4% of children aged 6 -11 months were weaned to poor nutrition which resulted to depleting nutrients for the immunity of the body and led to malnutrition. The study done by Kallard (2008) showed that infants were having high attack rate of pneumonia because of incomplete immunization schedule. Therefore, there is need to give health education to parents or care takers of these infants concerning the importance of vaccine, EBF and nutritious foods.

6.1.2: Gender

It was indicated that majority of the participants were males n= 26 (52%). This might be because genetically, males are weak and prone to so many conditions and diseases. These findings agree with Turner's study (1987) showed that 52% were males who were affected by pneumonia. Therefore, gender is one of the influencing factors of pneumonia in under five children. Several studies done world wide have reveled that males are more likely affected than females.

6.2: Treatment result

In standard case management guidelines or approach; treatment result is reflected through completion of treatment, outcome unknown, left against advice and death within and after 24 hours of admission. These treatment results evaluate the effectiveness of the approach.

The study findings showed that participant who completed treatment were 30%. This is contrary to what WHO guide lines recommend. The WHO completion target rate is above 85% (2002). The reasons for low completion rate might be; health workers not counseling parents or care takers on the follow -up care, health worker did not have knowledge of the standard case management. These findings correlate with the study done by Lutala (2004) showed that patients who completed treatment were 60.2% because care takers were not counseled on the importance of follow- up care on discharge. The other reason which contributed to 30% was children were not finishing treatment while in hospital, as shown from the table that children were discharged 2days after hospitalization. There discharged early regardless of their category of severity. Therefore there is need to hold children with pneumonia to finish treatment while in hospital.

The findings revealed that 46% [n=23] were outcome unknown i.e. did not come for follow up care after discharge. Not counseling care takers on follow up care, health workers were not having knowledge on SCM and care takers not seeing value of follow up care after their children have improved. These reasons contributed to high percentage of outcome unknown. This is contrary to what WHO recommends,

the outcome target rate is below 5%. The study of Lutala [2004] revealed that 15.9 percent of the participants were outcome unknown of pneumonia at Mchinji district hospital. This is three times to what has been revealed in the findings. The Advisory Technical Team [2006/2007] did annual review in 36 hospitals implementing SCM in Malawi and found of all admissions of 15,674 children with pneumonia of different severities, 998 [6.3%] had their treatment outcome unknown. Three districts had out come unknown of above 10% and Kasungu district hospital was inclusive. This high percentage was due to lack of specific places for follow up care, lack of team work and poor coordination in the hospitals. Therefore, there is need for the hospital to reduce number of outcome unknown by exploring from health care takers as well as health workers why there is high proportion of unknown. The hospital should also establish specific places for follow- up care.

The study findings indicated that 18% of participants died of both severe pneumonia and very severe pneumonia. 10% of the participants died before 24hours of admission and 8% died after 24hours of admission. The mortality during the first day of hospitalization was the consequence of the combination of risk factors such as late care seeking behavior and also due to associated conditions like malaria and anemia. To agree with the study of Wamanda (2004) reported that 40.1% children died within 24hours of admission because there was delay in commencing of therapy by the health workers, also due to late reporting to the hospital by care takers and delayed referral. However, this study there were no referral cases who died within or after 24hours of admission. The study of Enarson (2005) showed that high mortality was during the first day of hospitalization was due to combination of risk factors and associated conditions. This study supports the study findings above.

The study also showed that 14% of participants who died were those who were re-admitted. These children came in critical condition and were being admitted as very severe pneumonia. The reasons might be care takers were not giving oral antibiotics at home effectively which resulted to relapse of the condition. Then there is need for the care takers to be advised or counseled on importance of oral antibiotics. Cozier (2008) supports the importance of adherence of drugs concerning

children. There is also need to assess or rule out HIV in these children to prevent early death.

According to Booyens (2001), he defined system theory as set of interrelated and inter dependent parts designed to achieve a goal. According to standard case management as a system, there are inputs which include; under five children with pneumonia, number of days of hospitalization and assessment of client characteristics. For these inputs to be effective, they undergo the process or through put. In this study, the through put is the proper assessment, treatment of children with proper antibiotics for the recommended number of days. If this is effectively done, will lead to desired results or outcome such as reduced number of deaths, reduced number of outcome unknown, increased number of treatment completion rate.

Vital signs are very important in evaluating effectiveness of the treatment. Vital signs can be both the input and output or results in the system. The study findings reveled that there were no vital signs checked prior to discharge to evaluate the effectiveness of the treatment. Therefore, there is need to check vital signs on daily basis.

CHAPTER SEVEN

Limitation of the study,recommendation & areas for further reaserch.

RECOMMENDATION

The following recommendations have been basing on the research findings:

1. The DHO should ensure that health workers working in the pediatric wards and underfive clinics should be trained in standard case management and they should also be supervised.
2. There is also need for the hospital to establish under five death audit.
3. As reflected from the findings, there is need to emphasize health talks to the care takers of the target age group of 2 - 11 months.
4. In view of the importance of identifying deaths occurring before and after 24hours of hospitalization, special attention should be paid to the time elapsed between admission to the pediatric ward and time of death.

7.0: AREAS FOR RESEARCH

Results of this study indicated several areas that need further research such as;

1. Explore factors that hinder care takers to come for follow - up care.
2. Factors that lead to late care seeking behavior of parents with children with pneumonia.
3. Perceptions of health workers on standard case management of pneumonia in the underfive children.
4. Explore why young infants of below 2 months are not frequently admitted at the hospital.

LIMITATION OF THE STUDY

Data analysis was done manually which was inconsistent with quantitative research. Manual analysis in quantitative study is cumbersome and slow.

Some variables were difficult to determine in the participants for example height of the participants was not recorded on the files and as a result it was difficult to determine weight for height of the participants. Vital signs were not checked on daily basis to determine the effectiveness of the approach.

HIV status was not ticked on the file though it was present on the case file.

Since this study was done retrospectively other reasons for the variables would have been identified from the caretakers of the participants.

CONCLUSION

In conlusion standard case management is not ideal for Kasungu, as it has shown from the study findings the case fatality has risen from 7.6% to 18% of 2007 and 2008 respectively.

It has risen even that of the nation of 2006/ 2007 which was 6.3%. There is also increased number of out come unknown. There is need to improve the out come unknown and hence the completion rate will also improve. There is also need to record height on the card so that weight and height of participants can be determined. There is also need to check vital signs on discharge such as temperature and respirations so as to evaluate the effectiveness of the treatment.

CHAPTER EIGHT

8.1TIME TABLE

Activity	Feb	Mar	April	May	Jun	Jul	Aug	Sep	Oct	Nov
Problem identification										
Literature review										
Proposal writing										
Preparation of data collection instruments										
Submission and clearance of research proposal										
pretest questionnaire										
Restructuring questions										
Data collection										
Data entry										
Data analysis										
Report writing										
submission of dissertation										

8.2 BUDGET

Item	Qty	Unit Cost (MK)	Total Cost (MK)
(a) Stationery			
- plain papers	3	750.00	2,250.00
- ball point pens	8	25.00	200.00
- pencils	4	25.00	100.00
- hard cover books	1	550.00	550.00
- plastic folders	3	250.00	750.00
- big envelopes	5	80.00	400.00
- small envelopes	5	30.00	150.00
- flash disk	1	5,000.00	5,000.00
(b) Project Copies			
- copies of research proposal	3	3,000.00	9,000.00
- copies of dissertation	3	4,000.00	12,000.00
- dissemination of results	1	6,000.00	6,000.00
(c) Transport and Communication			
- local running to other resource centers		3,000.00	3,000.00
- phone calls		700.00	700.00
- internet		3,000.00	3,000.00
- transport to and from collection centre		3,000.00	3,000.00
(d) Lunch meals and refreshments	3	800.00	2,400.00
		TOTAL	48,100.00
		CONTINGENCY (10%)	4,810.00
		GRAND TOTAL	**MK51,910.00**

8.2.1 JUSTIFICATION OF THE BUDGET

Stationery

Adequate stationery was needed to cater for drafts and writing of final documents of both proposal and the dissertation.

Printing and Binding

Money was used for printing and binding the proposal and dissertation.

Transport and Communication

There was need for traveling during literature search, pilot study and data collection. The researcher traveled twice to and from Kasungu that is to deliver letters of permission to Kasungu DHO and time of data collection. There was need for communication between the researcher and research supervisor.

Lunch meals and refreshments

During data collection period, the researcher had meals for lunch and refreshments, since she spent more hours at health facility

Contingency

There is need for amount of money that will be set aside for any inconveniency that may arise during the research

Project Copies

The researcher will be required to produce 3 copies of finished proposal and 3 finished dissertation which will be submitted to the following equally: KCN, Kasungu DHO and one to be kept by researcher herself.

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APPENDIX: A

QUESTIONNAIRE ON EFFECTIVENESS OF STANDARD CASE MANAGEMENT OF PNEUMONIA IN UNDERFIVE CHILDREN TOWARDS CLIENTS OUTCOME

A. DEMOGRAPHIC DATA

1. Number of the file......... ....
2. Age in months...
3. Gender Male { } Female { }
4. Weight ....
5. Height ....

B. FACTORS AEFFECTING THE STANDARD CASE MANAGEMENT

6. Severity of clinical manifestations...
7. First admission .... Readmission......................................
8. Treatment given for pneumonia..
9. Number of days stayed in hospital...
10. Number of days shifted to oral drug ....

C. TREATMENT RESULTS

11. Recovered .... Follow - up care. Y / N
12. Left against advice ....
13. Died before 24 hours ....
14. Died after 24 hours ....

APPENDIX B

University of Malawi
Kamuzu College of Nursing
Private Bag 1
LILONGWE

Research and Publications Committee
Kamuzu College of Nursing
P/Bag
LILONGWE

Dear Sir/Madam

APPLICATION FOR APPROVAL TO CONDUCT A RESEARCH STUDY

I am a mature entry student, pursuing a Bachelor of Science in Nursing Education. I partial fulfillment of the program, I am expected to conduct a research study. I write to apply for approval to conduct a study on ***"Effectiveness of standard case management of pneumonia in under-five Children towards clients outcome at Kasungu District Hospital."***

Yours favourable response will be greatly appreciated.

Yours faithfully

MERCY KUDYA (MRS)

APPENDIX C

University of Malawi
Kamuzu College of Nursing
Private Bag 1
LILONGWE

The District Health Officer
Kasungu District Hospital
P O Box 19
KASUNGU

Dear Sir/Madam

APPLICATION FOR PERMISSION TO CONDUCT A STUDY OF DESCRIPTION OF EFFECTIVENESS OF STANDARD CASE MANAGEMENT OF PNEUMONIA OF UNDERFIVE CHILDREN AT KASUNGU DISTRICT HOSPITAL

I write to apply for your permission to conduct research at pediatric ward at district hospital. The tile of the research is as above.

I am a mature entry student at the above-mentioned College pursuing a Bachelor of Science in Nursing Education. In partial fulfillment of the program, I am required to conduct a research study. I propose to conduct the study in September, 2009.

The study will help to identify which areas needs improvement.

Your assistance will be greatly appreciated.

Yours faithfully,

MERCY KUDYA (MRS)

Telephone: + 265 253 400
Fax: + 265 253 630

All Communications should be addressed to:

The District Health Officer

In reply please quote No.
Ref. No. KDH/1/1
MINISTRY OF HEALTH
KASUNGU DISTRICT HOSPITAL
P. O. BOX 19,
KASUNGU
16th OCTOBER 2009

MERCY KUDYA (MRS)
UNIVERSITY OF MALAWI
KAMUZU COLLEGE OF NURSING
P/BAG 1
LILONGWE

RE; PERMISSION TO CONDUCT STUDYON EFFECTIVENESS OF STANDARD CASE MANAGEMENT OF PNEUMONIA FOR UNDER FIVE CHILDREN AT KASUNGU DISTRICT HOSPITAL

We write in response to the above subject. Permission has been granted for you to conduct the research at our institution.
It's our hope that the findings of the study will greatly improve services in managing pneumonic children in the district.
Lastly we would like to wish you all the best as you carry out your study.

Yours truly

F .K. Kambeni
Principal Health Services Administrator
For District Health Officer

University of Malawi
Kamuzu College of Nursing

RESEARCH AND PUBLICATIONS COMMITTEE

APPROVAL CERTIFICATE

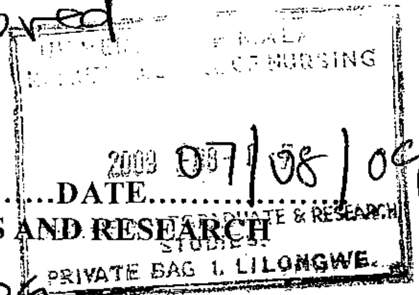
TITLE: Description of Effectiveness of Standard Case Management of Pneumonia in U5 children towards Clients outcome at Kasungu Dist. Hosp.

INVESTIGATOR(S): Mercy Kudya.

YEAR OF STUDY: 07/08/09

REVIEW DATE: 07/08/09

DECISION OF THE COMMITTEE: Approved



SIGNATURE:........Simwaka........**DATE**....07/08/09

DEAN OF POSTGRADUATE STUDIES AND RESEARCH

CC: supervisor: Mrs E Chilemba

DECLARATION OF INVESTIGATOR(S)

I/We fully understand the conditions under which I am/we are authorized to carry out the above mentioned research and I/We guarantee to ensure compliance with these conditions. In case of any departure from the research procedure as approved, I/We will resubmit the proposal to the committee.

DATE........7/08/09........**SIGNATURRE(S)**........[signature]........