

A STUDY OF COMMUNITY HEALTH OFFICERS  
PERFORMANCE IN PRIMARY HEALTH CARE  
IN NIGERIA

by

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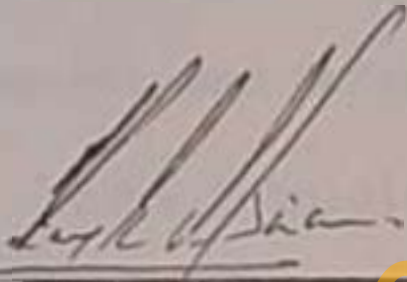
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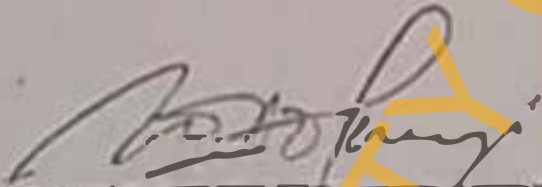
CERTIFICATION

We certify that this work was carried out by Beatrice Mojisola Oduyoye in the Department of Preventive and Social Medicine, College of Medicine, University of Ibadan, Ibadan, Nigeria.




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Dedication

This thesis is dedicated to my children: Olu,  
Abimbola, Yewande and Motunrayo; and to my  
Lote fother Popo Bobololo Savando -  
With God all things are possible.

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I dedicate this thesis to my children for being my best friends and to my late father, Papa Bobololo Sowonde, who would have enjoyed seeing me fulfill his dreams and aspirations.

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## ABSTRACT

The concept of using non-physicians to provide primary health care (PHC) emerged in Nigeria in order to achieve the objective of increasing health care accessibility to larger population, especially in the rural areas. Limited resources such as shortage of doctors, maldistribution of health personnel and awareness to use appropriate strategies responsive to meet needs of the community in solving health problems are among the factors responsible for such move by the Federal government.

Community Health Officers (CHOs) and their training programme was developed in 1979 to serve such purpose. This involved critical appraisal of task allocations. Training was given to acquire necessary skills, knowledge and attitudes adequate to perform PHC functions in the community. The development of this training and the utilization of CHOs at clinical settings, after training made it important to study their activities in order to link training with the functions they perform to establish that trainees are performing what they have been trained to do.

In developing countries including Nigeria, assessment of health care workers have seldom been accomplished by scientific studies. This new form of health care delivery requires empirical evidence to confirm its effectiveness. Approach to evaluate CHOs activities is based on, and composed of training, functioning, productivity, resources including facilities and notional objectives.

The central concern of this thesis is to study CHOs' activities in clinical settings. The study objectives were: To provide baseline data on CHOs' characteristics relating to their performance and training for future studies; to identify factors which might influence their future performance. The cross-sectional study collected data from 384 CHOs in Nigeria. A sample of 54 CHOs obtained from four randomly selected local government areas in each of the 10 randomly selected states were observed in the field between February and March 1983. Some components of "Functional Analysis Model" served as the general reference and provided the analytical framework. All training institutions, and Chief Health Officers in State Ministries of Health participated in the study. Three statements of hypotheses stated were tested. A major problem in performance evaluation in health

core research has been the lack of appropriate research method with acceptable degree of precision and validity. This study developed and tested instruments from CHOs curriculum. The significant result obtained from an experimental work carried out suggests the validity and reliability of the instruments to evaluate CHOs performance.

Descriptive findings provided detailed baseline data not previously available about the institutions since their inception. Bivariate relationships were analyzed with cross-tabulations, and analyses of variance techniques. The following significant influencing factors emerged: Professional Background; Years of Experience; Adequacy-of-Training Perception of CHOs, and their Educational Needs were related to performance. Another significant result was that resource constraints were related to problems CHOs were encountering at the clinical settings. Another important finding about CHOs' productivity indicated that a higher proportion of CHOs' time (46.7%) was spent performing administrative functions while (32.7%) was spent performing clinical functions.

Implications of the findings and recommendations suggest the need for the Federal Governments, and Institutions to re-structure organization, and supportive strategies for CHOs, which will enhance their future performance and improve the health care coverage of communities.

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## INTRODUCTION

The burden of disease is a basic determinant of a nation's demand for health manpower. This was indicated by many authors as a result of their personal involvements or observations in the health care delivery system in Nigeria (King, 1966; Morloy, 1967; Akinkugbe, 1973).

In 1979 a programme to train new cadres called "Community Health Officers" (CHOs) commenced in the country by the Federal Government of Nigeria. This training was one of the non-physician health workers programme designed to implement the primary health care (PHC) currently being practiced in the country. (Report of the Project Formulation Team" FMOH 1975-1976).

For many years many non-physicians had been in the country providing health care in the rural areas but they were not adequately trained. Among the reasons for the development of non-physicians training programmes by the Federal Government were the following:

- To provide health coverage for the whole country, especially in the rural areas who had no access to modern health care services.

- To provide more non-physician health workers especially for work in rural areas because of shortage of doctors.

- To reduce the cost of health care services because there is escalating cost of health care services all over the world. As compared with the doctors, the cost of training non-physicians, their maintenance, the cost of the services they would render to the community would be cheaper.

Other factors identified included maldistribution of health workers. For example (Oyobolo 1960<sup>9</sup>), observed that only a few doctors wish to serve in the rural areas. Furthermore, the use of high level medical personnel who may require more than five years to complete medical education for PHC is economically unreasonable. (Akinkugbe, et al 1973; Kotz and Fulop, 1978).

There are other factors such as cultural and social reasons why the utilization of CHOs and other health workers for the delivery of PHC might be perceived as ideal. Their background would be similar to that to the rural population they would serve, since they are often selected from their states of origin. Physicians and other health workers with urban orientations may intimidate their rural patients and may be unable to meet their health care problems because of barriers such as a communication gap and a vast cultural gulf separating the two. Dealing with the causes of poor health requires more of the preventive health care services than curative medical effort. This approach is contained in the

training of the newly prepared Community Health Officers so that they can be effective agents in the provision of primary health care.

Innovative efforts in other countries to improve health care coverage by using simple technology which includes utilization of non-physicians have been successful in some countries. Such countries include China, Cuba and in Africa, Tanzania (Nowell, 1975; Marley, et al. 1983; Akin, et al. 1985;).

An important issue is the need to bridge the cultural, economic and scientific gap between the health professionals, and the doctors. (Worner, 1977). Taylor states "Doctors will never solve the primary health care problems of the poor. The mass need must be covered by appropriately trained primary health care practitioners and by the people themselves. Under this system, doctors will assume a largely supportive role" (Taylor, 1976). However this approach will play a major and significant role in the socio-economic welfare of the community. It should include other measures such as the followings: control of environmental sanitation, improvement in the level of education, agricultural production, provision of good housing, adequate quality and quantity of water. Achievement of positive health however, would be the starting point for general development in rural primary health care (Akhtar, 1975, Jeyo, 1977, Porkor, 1977;

In Nigeria, the training programmes for community health officers (CHOs) have been planned to give them adequate skills, knowledge, and positive attitudes. These will equip them to cope with the challenge they face to provide an independent, health oriented, family - focused role in the community (De Sweemer, 1976).

After training, the most common work-settings for maximum utilization of CHOs' skills and knowledge are health centers in the community. If the goal of increasing their knowledge, skills and attitudes has been accomplished, the CHOs should perform effectively. Their performance should lead to increased health coverage and quality of health care, equity, and cost-effectiveness. Therefore, the training, the utilization and evaluation of the performance of Community Health Officers become important factors to be studied.

However, even though CHOs have been provided with increased knowledge, skills and attitudes, these alone may not accomplish effective performance. Knowledge and the pattern of utilization of these attributes acquired by CHOs at the training institutions depends on other factors



in CHOs' working environment. Resource constraints at practice areas may be impediments impeding CHOs' performance. Availability of drugs, vaccines, equipment community participation, and other structural supports are of vital importance to effective performance (WHO, Report Series No. 5, 1981).

There has not been any previous study to assess the performance of CHOs since the development of their training programme in Nigeria over five years ago. To the extent that the energy for the development of this training programme came from the concern that larger populations must be provided with health care to increase health care access and improve the quality of health, it is the intent of this research to study the activities of CHOs and assess their performance in the primary health care setting in Nigeria.

The text is organized into eight chapters. Chapter One provides general information on the study area. The rationale and objectives for conducting the study are stated, the health problems are described, and a statement of the research problem and hypotheses is presented.

Chapter Two deals with the health care system in Nigeria giving account of the historic, socio-political, economic and

cultural factors relevant to the study.

Chapter Three presents the Health Service Manpower development for primary health care in Nigeria which included the development of the Basic Health Services Scheme. The training programme of Community Health Officers and significance of the study are described.

Chapter Four is a review of the literature. This is multidimensional because apart from reviewing literature which addressed the performance evaluation of health workers in clinical settings, efforts are made to review literature on Functional Analysis as a method to measure the performance of health workers.

Chapter Five deals with Methodology. This describes the procedure employed for research design. The designing of the instruments for data collection, and formation of variable. The development and validation of instruments used in the study. Procedure for sampling design and method of data analysis.

Chapter Six is a presentation of results.

Chapter Seven presents discussion and relevant implications of the study.

Finally, Chapter Eight provides conclusions and general recommendations in relation to the findings.

## CHAPTER I

### BACKGROUND OF THE STUDY

#### 1.1 Introduction

The general concern all over the world by many countries, to provide health care services for all their people, especially in the rural areas, urged the Federal Government of Nigeria to set in motion bold, imaginative, scientifically sound, and well organized strategies to achieve this objective in the Third National Development Plan (TNDP) 1975-1980. It is, therefore, referred to as the Genesis of a formal national health care plan in Nigeria to provide basic health care services (FMOH Report 1975-1980). "Third Nat. Develop. Plan".

The problem of rural inaccessibility to health care delivery which had been identified by many dedicated Nigerian people had become a vital problem that must be overcome (Akinkugbe et al, 1973).

However, during the formulation process, one of the major constraints confronted by the government was lack of health manpower needed to implement this programme. Therefore, great emphasis

was given to the training of new cadres of community health workers with a concept of team approach, along with existing health professionals.

Nigeria has potential economic and educational resources sufficient to produce a mechanism which can provide basic health care services for the rapidly growing population and to train in her own institutions the personnel to maintain it (FMOH Report (1965) "Health Manpower Survey, Lagos, Nigeria. FMED (1969) Studies Not. Manpower Board Fed. Min. of Economic Dev. Mon./ No. 9).

The impetus for the development of a non-physician training programme for Community Health Officers (CHOs) and other cadres of health workers, came from the concern that shortage of overall health manpower limited access to primary health care for the people in Nigeria. Also, it became imperative for the government to respond to the needs of the growing population demanding better health especially in rural areas.

The establishment of this type of training programme therefore has a purpose in the delivery of primary health care. It is to provide effective health services to improve coverage to the community by utilizing health personnel with less but adequate and effective training than is required by doctors.

## 1.2 Community Health Workers In Developing Countries

The creation of the non-physician training programme is not peculiar to the Nigerian situation. Countries all over the world have trained and used non-physician health workers to deliver health care to the people in their community (Fendoll, 1972; Lippard and Purcell, 1973; PAHO, 1980 Morley, et al. 1985).

Non-physicians are called and addressed by different names in different countries. In Russia they are called "feldshers"; in China, "barefoot doctors;" in the United State of America "physician assistants/associate nurse practitioners and Medex." In developing countries, different names are used. In the Cameroon they are called "matrones," while in Ethiopia, Uganda, Kenya, Malawi, and Zaire they are known as "village health workers/clinic assistant." In Tanzania they are addressed as "mganga" meaning rural doctors; and in Guatemala they are referred to as "health promoters." This is not an exhaustive list. These non-physicians are all over the globe.

The reason for their creation and existence, common to developed and developing countries, is

the desire to extend service coverage to the community at a low cost. Increasing cost of health and social services, shortages and maldistribution of health manpower, especially doctors, are common problems all over the world (Stephen, 1979; Katz and Fulop, 1980).

The trend in providing health services has shifted to the use of non-physician health personnel, an intermediate level, labor-intensive technology in the hope that it will be more appropriate to the needs and social context in which the process of health care occurs (Smith, 1978; Galan, 1980; Kleczkowski, et al. 1984).

### 1.3 Research Problems

The new national health plan in Nigeria is the provision of comprehensive health services for all the people. Such people are those in the rural areas who form the majority of those previously did not have access to modern health care.

The new approach adopted by the Federal Government in order to increase the rural population's access to health care has concen-

the desire to extend service coverage to the community at a low cost. Increasing cost of health and social services, shortages and maldistribution of health manpower, especially doctors, are common problems all over the world (Stephen, 1979; Katz and Fulop, 1980).

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trated on the use of a "Team Approach". Those different categories of health workers would provide promotive, simple curative, and preventive care in the communities.

Community Health Officers are front line health care providers in the community. They have had adequate training and orientation to the new concept and new challenge in the community. Their training has also been geared to include the challenge of coping with the new idea of community participation.

The effectiveness and the credibility of these new community health cadres, the relevance of their training, their utilization, and development to the community become identified research questions to be addressed in this study.

A detailed examination of these activities is needed, first to highlight CBOs' functions and understand their contribution to PHC in Nigeria. Second, to see how the political-socio-economic changes affect or interfere with their activities. Furthermore, to identify the extent to which organizational factors support or impede their activities. Presently, there is no known literature on CBOs activities which systematically examines



these activities and the distribution of time CHOs spend among the different functions they perform in the practice areas. There has been no examination of the relationship between CHOs' training and application of their acquired skills and knowledge in the practice areas. Neither is there examination of the relationship between CHOs training and utilization in the field. There has been no examination of the relationship between set of characteristics which distinguish or typify groups of CHOs for comparison of their effectiveness. There has been no examination of the relationship between CHOs training and environmental factors such as availability of resources and their implications on health care delivery in PBC. Finally, there is no systematic review of factors which may influence CHOs activities such as professional background, years of experience, supervision and generally, assessment of training needs. Therefore, there is a need to better understand the present role of CHOs and provide baseline data for later assessment of how CHOs as health personnel are functioning under the current health care delivery system. The thesis will attempt to address these issues systematically.

#### 1.4 Rationale For The Study

Several reasons stimulated the investigator to conduct this study.

First, evaluation of health services in developing countries have traditionally relied upon descriptive techniques. The writings of Dutt (1963); King (1966); and Bryant (1969) are examples of the assessment of health services from prolonged personal involvement with them. Subjective impressions were used to demonstrate effectiveness of community focused health programmes rather than objective measures. Major impediments as stated by Ransome-Kuti (undated) were lack of methodologies and necessary research tools for operations research. This issue was broadly addressed by Bryant and Osuntokun respectively at a round - table conference (Bonkowski and Bryant 1983). Each broadly and adequately emphasized the need to use scientific studies to investigate various components of our health care delivery system in Nigeria. Furthermore, in a situation such as Nigeria today, where resources are limited, where people are demanding better health and accountability, evaluation based on scientific findings becomes essential.

Secondly, methodologies appropriate for evaluation have been identified as a problem not only in developing countries but also for developed countries alike. Efforts are therefore required to develop appropriate methodologies for this type of operations research (Taylor, et. al. 1976).

### 1.5 Broad Research Goal

The study is designed to provide baseline data of the characteristics of Community Health Officers, in the delivery of primary health care in Nigeria. Such information will include a description of an evaluation of CHOs' training programme since its inception. More specifically, the study will attempt to document their present level of performance. The findings will provide information about the contributions being made by this cadre to the primary health care delivery system in the country for future studies.

## 1.6 Aims Of The Study

The aim of the work is to study CHOs' activities in health facility settings in order to evaluate their performance. This would help to determine their effectiveness in performing the tasks for which they have been trained. Furthermore, it is the intent of this study to identify factors which may enhance or impede effective performance of CHOs in their practice areas.

### The General Objectives Of The Study

1. To develop and validate methods which will allow for assessment of the activities of CHOs at health centers. Relationships between training and practice could therefore be examined.
2. Assess performance of tasks related to job description of CHOs in terms of "quality" of performance as well as frequency. Instructional objectives in the curriculum will become key components for assessing the quality of performance.
3. Describe CHOs' self-perceived competence and relate this to performance as observed by the author.

4. Identify problems which CHOs perceived as influencing their performance at health facility setting.

#### Specific Objectives Of The Study

1. Review the curriculum of CHO's training programme, and their job description.
2. Describe baseline information about the Training institutions.
3. Assess the actual tasks they perform in the field, as well as their self-perceived competence of those tasks.
4. Describe factors which Community Health Officers perceive as constraints to their satisfactory performance.
5. Relate the actual tasks performed in the field to the stated objective and their job description; and to determine the proportion of time spent on various activities.

## 1.7 Significance Of The Study

The Government has established the training of CBOs to provide accessible primary health care to its people.

CBOs' performance depends largely on many factors of which training is vital. Ministry of Health in each state is supposed to provide resources such as drugs, equipment, remuneration/incentives to community health workers. Since the development of this training programme there has not been any empirical study to examine their activities in primary health care. This study will attempt to highlight those activities of CBOs which are not known.

Data generated from this study will be useful to many organizations. Knowledge of CBOs' skill utilization patterns at health centers will highlight their role in the community.

Knowledge of CBOs' performance when related to training programme would enable educators to compare the performance of their graduates to a cross-sectional sample of CBOs. They could conceivably modify their programmes, and better prepare their students for an expected role within a work setting.

Ministers would use this information to understand what aids or hinders effective performance of their health workers and to provide necessary resources.

Health planners will use this data to know the potential trends of contribution that is being made by CHOs in Primary Health Care.

### 1.8 Statement Of Hypotheses

$H_{01}$  : CHOs observed performance will be associated with the following variables as indicated:

a. Professional Characteristics:

Professional background will have a positive relationship with CHOs' performance. Public Health Nurses will perform better than Registered Nurses/Community Midwives. The latter will perform better than Higher Rural Superintendents.

b. Years of Experience:

There would be a positive relationship between years of experience CHOs have had after training and CHOs' performance. The longer the years of experience, the better would be the performance.

c. **Perceived Adequacy of Training:**

This would have a positive relationship with CHOs' performance. The more positive the perception of CHOs about the training received, the greater the performance.

d. **Acquisition of Knowledge Versus Application Of Knowledge In The Field:**

Opportunity to practice effectively in order to utilize all acquired skills and knowledge at training institutions in the practice areas would be positively related to CHOs' performance.

e. **Need For Further Training:**

Need for further training would have a negative relationship with CHOs' performance.

f. **The Number Of Hours Assigned To Theoretical Training:**

The number of hours assigned to theoretical training at institutions will be positively related to CHOs' performance at the clinical settings. The longer the number of hours, the greater the CHOs' performance.

g. **Number Of Hours Assigned To Practical Experience:**

The number of hours assigned to practical experience at institutions will be positively related to CHOs' performance in the practice



areas. The more hours assigned to practical experience during the course, the better the CHOs' performance in the practice areas after training.

h. The Number Of Full-Time Teachers:

The greater the number of full-time teachers available to teach CHOs throughout the training at the institutions, the better would be CHOs' performance in the practice areas.

i. Availability Of Drugs At The Clinical Settings:

Availability of drugs at the clinical settings will be positively related to CHOs' performance. The more drugs are available, the better would be CHOs' performance.

j. Availability Of Vaccine At The Clinic Settings:

Availability of vaccine will be positively related to CHOs' performance. CHOs' performance will be greater when vaccine are available.

k. Availability Of Equipment:

Availability of equipment would be positively related to CHOs' effective performance at the clinical settings. When equipment are available, CHOs' performance would be greater.

HO<sub>2</sub> : Problems CHOs will encounter at the clinical settings will be associated with the same variables listed above.

HO<sub>3</sub> : CBOs' self-perceived competence will be positively associated with CBOs' observed performance.

### 1.9 The Health Problem Identification in the Country.

The Federal Government of Nigeria after independence employed various strategies to provide adequate health care for all of its people with little success.

The population was growing exponentially, estimated to be 80.6 million (World Bank, 1980), but growth was parallel with poor health indices throughout the country. A high proportion of morbidity and mortality among various age groups especially infants and children was due to common communicable diseases. For example, it has been documented that babies born in developing countries will on average live 20 years less than those born in the industrialized world. Half of this could be explained by the fact that about 17% die before

their first birthday, whereas only about 20 do so in the industrialized world (World Bank, 1980). Studies have revealed that this tragic health problem could be solved by preventive measures if appropriate strategies were used. Mortality in children between the ages of one to three was reduced by combined nutrition and health care services provided by community health workers in India (Kielmann et al, 1982). In Nigeria the mortality rate was reported to have been reduced in Katsina among children of one month to 11 months from 115 per thousand to 34 per thousand in two years. Again, this was achieved due to health activities such as health education, early diagnoses and treatment provided partly by community health workers (Ransome-Kuti, undated).

The health status of the nation did not improve despite the huge amount of money spent on the health sector. This was because a yawning gap existed between health sector because a yawning gap existed between curative and preventive health services. Like many other developing countries, doctors and other health personnel for providing health care were continuously provided but failed to solve health problems of the community. The reason was that the

majority of these health personnel lived in the urban centers where only about 25% of the population lived. For example, a study by Oyebola (1980<sup>b</sup>) revealed that about 20% of Nigeria's estimated 80 million live in urban areas. Seventy percent of all doctors in Nigeria are concentrated in seven cities, six of which are those in which the older medical schools are located. More than half of the remaining 30% of available doctors are concentrated in the big towns in the country.

In any health service system, effective health planning is essential to combat health problems. This requires health information systems to provide policy makers with the necessary information for planning, implementing and evaluating health care services. In Nigeria, health information system was weak and rather ineffective. Consequently staff skills, knowledge and activities in the health sectors did not adequately meet the health needs of most people especially in the rural areas.

WHO Handbook of Resolutions and Decisions (WHO, 1977) informed its member states that the level of health of hundreds of millions of people in the world was unacceptable, and that half the population of the world did not have the benefit of adequate

health care. Furthermore, it was re-affirmed that health is a basic human right and a worldwide social goal; that it is essential to the satisfaction of basic human needs and the quality of life; and that it should be obtainable by all the peoples.

The Declaration of Alma Ata in the Soviet Union (WHO 1978) appealed to all governments of member Nations to re-examine their health care systems policies and strategies. Each government was to take appropriate measures, to launch a comprehensive national health system in cooperation with other sectors. By this action, the WHO is discharging its constitutional functions as the coordinating authority on international health work. Other international agencies, national governments, the World Bank and charitable groups have collaborated and allocated funds for PNC. For example, USAID allocated approximately \$85 million in 1980 (Parlato and Favin, 1982).

Health care implies a broad spectrum of services designed to reflect and meet the needs of the population. It must be approached through a flexible system if there is to be any real improvement in the community for which it is designed.

Highly sophisticated, capital intensive technology, specialized curative medicine and other

sciences have had a limited impact on people in developing countries especially for those in rural areas. (WHO, Technical Report Series No. 2. 1979). In Nigeria despite the enormous amount of money spent on the health sector, the health profiles have tragic uniformity in all the states. In the second Nigerian National Development plan, approximately 54 million Naira was allocated for health out of a total National expenditure of 1,025,368 million Naira (FMED, 1971). However, this allocation was concentrated in the urban areas and for curative care.

#### 1.10 The Health Problem Situation In Nigeria

1. Nigerian population is unknown but thought to be over 80 million (World Development Report, 1980).
2. About 75% of the population live in rural areas, and the majority are poor.
3. It is said that 75% of the population have no modern health service. The existence of a rigid institutional system makes accessibility difficult for the community in terms of physical, social, cultural, and financial factors as follows:

- Geographical inaccessibility in terms of distance, travel time, and lack of means of transportation.
  - Financial inaccessibility: Fee-for-service which acts as barrier for many who are poor and live below subsistence.
  - Cultural inaccessibility: Conflict between technical and administrative standards of the services and the habits, cultural patterns and customs of the communities in which they are provided.
  - Functional inaccessibility: The type of service often fails to meet the real needs and demands, for example, the system of referral does not provide easy access to the level of care required.
4. There is a shortage and maldistribution of health manpower particularly between rural and urban areas.
  5. Great imbalances exist between curative and preventive services with undue emphasis on secondary and tertiary medical care.
  6. The cost of medical care, per service unit, is increasing significantly. The cost of performing the more complex and less frequently

needed services especially reduces resources available for providing universal coverage for common diseases.

7. Deficient training of health manpower personnel.
8. Insufficient health care facilities.
9. Lack of reliable vital and health statistics.

Prevalence rates for preventable diseases are high. The available statistics show that over 50% of health problems either appearing as infectious diseases per se or camouflaged under malnutrition, convulsion, or ill-defined conditions are preventable.

As many as 50% of young children have been estimated to die before reaching the age of 6 years. As many as 6/1000 mothers are estimated to die during the pregnancy, delivery, and early post-natal period.

Acute respiratory infection and common diarrhoeal disease account for most of the deaths in children. Malaria is endemic. Malnutrition among children is of enormous consequence.

Furthermore, Nigeria is characterized by widespread absence of water distribution and of sanitary systems for disposal of human waste.



Against the magnitude of these health problems are:

- Increasing cost of health and social services.
- Escalating demands for primary health care.

#### Statistics Of Available Health Profiles Available In Nigeria

Tables 1-7 present details of available health indices and facilities in Nigeria.

In summary, it is indisputable that many of the health problems plaguing developing countries are present in Nigeria.

It is encouraging that the Federal Government has accepted that a healthy nation is an asset to the Government and therefore has committed itself to many services which can improve the health of all the nation by using intersectorial and community participation.

The use of non-physicians such as CBOs cadre is one of the strategies which has the potential to improve health conditions at an affordable price under the present economic condition. However, it is essential to be seen how effectively these cadre of

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The use of non-physicians such as CHOs cadre is one of the strategies which has the potential to improve health conditions at an affordable price under the present economic condition. However, it remains to be seen how effectively these cadre of

health personnel are functioning as agents in the delivery of primary health care in Nigeria.

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Table 1. Health Status In Nigeria 1979-1981

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Crude death rate	20/1,000
Crude birth rate	45/1,000
Infant mortality rate (rural)	150/1,000
Infant mortality rate (urban)	120/1,000
Maternal mortality rate	6/1,000
Population Growth	2.5 percent
Life expectancy	45 years

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Source: FMOB 1979-1981

Table 2. Major Causes of Morbidity from Notifiable Diseases in Nigeria, 1979-1981 (top 20)

Notifiable Diseases	Average Number of Cases per annum
Malaria	1,471,561
Dysentery (all types)	293,747
Measles	129,671
Pneumonia	114,692
Gonorrhoea	68,087
Whooping Cough	56,913
Schistosomiasis (all types)	41,662
Filariasis	27,521
Chickenpox	26,384
Ophthalmia Neonatorum	14,778
Tuberculosis	10,838
Leprosy	8,903
Onchocerciasis	8,635
Infective Hepatitis	7,450
Food Poisoning	6,153
Trachoma	5,639
Viral Influenza	4,721
Tetanus	3,035
Syphilis	1,548

Source: FROM 1979-1981

Table 3. The Causes of Admission into Hospital in Nigeria

Cause	Percent
Infection & Parasitic Diseases	38.2
Pregnancy & Childbirth	23.1
Other	5.9
Genito Urinary Disease	5.8
Accidents	5.3
Digestive System Diseases	5.0
Diseases of Nervous System	3.3
Ill-defined Conditions	3.2
Blood Diseases	3.0
Skin Diseases	2.4
Nutrition & Metabolic Diseases	1.8

Source: FMOH 1975

**Table 4. The Mortality Rate in Nigeria (1981)**

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The five commonest causes of death in hospitals in Nigeria are as follows:

1. Infective and Parasitic Disease
  2. Diseases of Respiratory System
  3. Accidents, Poisons, and Violence
  4. Diseases of Circulatory System
  5. Diseases of Digestive System
- 

Source: FMOH 1981

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**Table 5. Health Facilities Establishments in Nigeria (1981)**

Number of Registered Medical/Health Establishments	71
Number of Beds	4,021
Number of Urban and Rural Health Centers	688
Number of Beds	3,561
Number of Health Clinics and Dispensaries	3,407

Source: FNCR 1981



Table 6. Health Manpower (1981-1982 data)

Population per doctor	10,399
Population per dentist	333,000
Population per registered nurse	3,030*
Population per public health nurse	2,000*
Population per midwifery nurse	3,851*
Population per pharmacist	30,303
Population per health educator	250,000

\*Recruitment of CBOs are/among these health personnel.

Source: FMOB 1981-1982

Table 7. Training Institutions Available in Nigeria(( 1981-1982)

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Medical schools	12
Schools of General Nursing	48
Schools of Midwifery	58
Schools of Public Health Nursing	5

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Source: FMOH 1981-1982

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## CHAPTER II

### HEALTH CARE SYSTEM IN NIGERIA

#### 2.1 Introduction

In order to adequately conduct a comprehensive scientific investigation to evaluate the performance of Community Health Officers at health facility settings in primary health care in Nigeria, one needs to have, *inter alia*, in-depth knowledge of the characteristics of the population to be studied, including its origins (i.e., historic, socio-political events that led to its creation), its socio-economic status, and cultural factors that influence its development.

The purpose of this chapter is to highlight those geographic factors, demographic patterns, historic socio-political, socio-economic, and cultural factors considered important for this study.

## 2.2 Nigeria - A Brief Resume

### Population

The population is said to be about 80 million (World Bank, 1980; FMOH, 1970-1980). It has a predominantly fast growing young population with a fairly large percentage (40.50%) under 15 years, and also a large population of reproductive age. Percentage of women in reproductive age group (15-44yrs) is estimated as 41%, while average annual growth of population is 2.5% (for Mid-1980) (World Bank, 1980; FMOH, Report 1970-1981. "Annal abstract of Statistics").

## 2.3 Geography And Population Distribution

The Federal Republic of Nigeria is an entirely tropical country, occupying a land area of 913,073 square kilometers on the west coast of Africa. More than three times the area of the United Kingdom, or slightly more than the combined areas of France and both Germany, Nigeria is larger than any West European country. The country can be roughly divided into north, west, and east areas

east areas with about two-thirds of the land area above the west-east reaches of the Niger-Benue. The south portion of the country is again divided by the north-south limb of the Niger into two roughly equal land areas and populations. Beginning at the seashore in the south and moving north the country and climate proceeds by imperceptible states from rain forest, to park forest, to park savannah, savannah, scrub, to semi-desert and Sahara Desert (Buchanan and Pugh, 1955).

Nigeria has four predominant tribal groups: Hausa and Fulani in the northern part of Nigeria, Ibo in the southeast and Yoruba in the southwestern part of Nigeria. There are three main languages -- Yoruba spoken in the west, Hausa in the north, and Ibo in the east; but there are over 300 dialects that cut across the three main major tribal languages and, therefore, English is the umbrella language for the country in terms of official, technical and commercial purposes but not social intercourse (Nigeria (1979) "Handbook of Commerce and Industry in Nigeria", Federal Ministry of Commerce and Industry, Lagos.)

## 2.4 Economy

Most of the population live on subsistence agriculture, either outside or on the fringe of the money economy. The great majority have some money income but only a small proportion live entirely within the money income.

The major earner of foreign exchange is petroleum. Nigeria is the world's eighth largest producer of crude oil. Nigeria has also been described as the fourth largest democracy since 1979 (Herakovitz, 1979: 314). Other resources include mineral oil, cocoa, vegetable oils, ground nut oil, tin, hides and skins, rubber and timber. The per capita gross national product estimate is ₦ 1486 (Nigeria, Annual Abstract of Statistics, 1971).

However, today it is no secret that the economy of Nigeria which was buoyant few years ago has declined due to global recession and a drastic fall in the sale of crude oil which is the major foreign exchange earner (Economic Intelligence Unit, 1982). Presently, it is a declared major objective of the government policy to provide new sources of employment in order to raise the standard of living of the people and to increase their wealth

and self-reliance. Increased prosperity could account for much improved survival compared to improvement in observed mortality rates. A study was conducted in Guatemala in 3 villages where a medical care against nutritional inputs were compared among toddlers ages 1-4 years.

Findings showed that mortality had declined overall among the control village. The growth of children in the nutrition village was better than in either treatment or control village (Ascoli, 1967).

In Nigeria, means to achieve this objective has been to expand the production and sale of agricultural products within the nation, and on the world market. Another way has been to develop industry using locally produced raw materials (Nigeria Handbook of Commerce and Industry, 1980).

## 2.5 Cultural Background And Religion

Nigeria is heterogeneous both in religion and culture. Beliefs and social background are very complex (Coleman, 1963). Each state and locality in Nigeria possesses rich ancient heritage, with deep rooted cultural values. All these have significant influence on health care provision and

utilization.

The two predominant religions in Nigeria are Christianity and Islam. The majority of people in the southwest and southeast are Christian, while the majority of the people in the north of Nigeria are Moslem (Ajayi, 1965).

## 2.6 Education

Literacy in Nigeria is still low; it is estimated at 20 - 25%. However, illiteracy is being reduced as education spreads. There is hope for upward trend with the implementation of universal compulsory primary education for all children at the age of six years since 1974. Roughly 25% of the population consists of pre-school children under the age of five (FMEU, 1971, Annual Abstract of Statistics). Education is now considered to be essential for upward mobility in Nigeria (World Bank, 1980). The majority of the population have become more receptive to the idea than ever before. Level of education has been identified to have association with use of health care utilization.



Gosler (1978) concluded in his study of "Illness and Health Practitioner Use in Calabar, Nigeria" that mothers with more education tended to use western health services. Other studies in Nigeria which addressed this issue confirming Gosler's view included (Okediji, 1978; and Bamisoye, 1978).

## 2.7 Political Structure As Related To Health

Nigeria is a federation comprising 19 states and a Federal capital territory. There is a central Ministry of Health, and a State Ministry of Health for each of the 19 states. Also in each state, there is a Health Management Board created within the last few years to decentralize the functions of State Ministries of Health in order to bring health care nearer to the local people at the grass root.

Health is a cooperative effort, with clearly defined division of labor between the federal and state governments. However, each state has wide power to administer and manage its own territory with resources allocated largely from the federal government. Each state Ministry has a Commissioner in charge, a Permanent Secretary, and a Chief

Health Officer. Preventive and curative services have been rigidly divided at all levels from the center to the point of service. This has resulted into very little personal preventive health services reaching the people, especially in the rural areas. It has been estimated that only 25% of the population has access to health services, leaving 75% with no modern health care coverage.

Currently, there is strong awareness and the Federal Government makes it a top priority to bridge the gap between curative and preventive care with collaborative efforts of all states ministries of health and total community participation.

At present, limited national resources with accompanying inflationary pressure on food prices which in turn affect health status of the community at large, were partially responsible for political unrest which brought the second Republic to an end on Dec. 31, 1983, in a coup d'etat. Further deterioration in the matter led to another change of government in August 1985. Thus it is hoped that the present military government would demonstrate its awareness of the present health problems in the community and give priority to primary health care in order to bridge the gap between curative and preventive health services.

Policy emphasized rural development, giving priority to health delivery system which will be simple and affordable to the larger population under the present critical economic problems.

## 2.8 Health Service Background

In Nigeria, there are two possible sources of health services to the community.

### a. Traditional System:

Nigeria has always had traditional medicine men to provide a form of medical care to the society from the time immemorial. This system was set up by the community itself. Its agents are known by names that vary according to the local culture and healing arts they practice such as: traditional birth attendants, herbalists, bonesetters, etc. The community has developed the system in an attempt to solve its own health problems (Adeniyi-Jones, 1963; Ademuwagun, 1969; Oyebola, 1980).

In many developing African countries today there is increasing awareness of the value of traditional medicine and the necessity for improving its standard. This system of

medicine has played and will continue to play a major role in the development of modern medicine (Lambo, 1963; Taylor, 1969; Tello, 1979)

b. The Institutional System:

This consists of state hospitals, teaching hospitals, mission hospitals, health centers, private hospitals, pharmacists and patent medicine drug sellers. Some of these institutions have failed to provide for health needs of the community because they provide curative treatment with less emphasis on preventive aspects.

Dr. Schram in his book, History of the Nigerian Health Services, brilliantly and effectively described the evolution of health services in Nigeria which could be traced back through 500 years starting from the slave trade period, through the British dominance to the National Independence in 1960.

Among the dominant factors in the introduction of Western medicine to Nigerian culture was the British government which controlled and colonized the country for many centuries. Another important factor which is noteworthy is the role played by the missionary bodies in the growth of medical work

in Nigeria. The first true hospital, The Sacred Heart Hospital, was established by the Roman Catholic Mission at Abeokuta, about 110 kilometers from Lagos. Except for a few community oriented doctors and nurses trained abroad, many training schools and university training in Nigeria were hospital oriented. The first auxiliary training school was established at Ibadan in the 1950s with the help of the World Health Organization. Among the pioneers were Drs. Norman Taylor, Nugent and Adeniyi-Jones (Adeniyi-Jones, 1963).

Under the initial colonial development, 1946-1955 a development plan for health services was written. The importance of clinical and preventive medicine was emphasized, but there was no indication as to the integration of the two (Nigerian Medical Association, 1966). However, this served as the basis for subsequent health plans.

## 2.9 Health Priorities After Independence

After independence, the First National Health Plan was written in 1962, for the period 1962-1968

(First National Development Plan, FMOH 1962-1968).

The First National Development Plan 1962-1968 - The aim was to give a sense of direction to the economy, a sense of priorities and urgency and to enlist the support and cooperation of all sections of the community and health development programmes aimed at establishing over a period of years, a fully integrated and preventive service throughout the region. Later, extensive hospital development and curative services dominated the health arena with little attention directed to rural health services. Another important aspect which featured prominently was the financial provision made by the Government. It was far too short of what was required to attain health objectives in the development plan. Also percent actually spent was too low. About forty - five million pounds (£45,000,000) (100 million naira) was allocated to health out of a total of 800 million pounds or 1600 million naira of the total expenditure. (First National Development Plan, 1962 - 1968).

Therefore, up to 1966, there was no adequate national policy of health care infrastructure which reached the majority of the population of 80 - 85% who lived in the rural areas (Agency for International Development, 1970).

Regarding the issue of health manpower, Owen (1967) compiled the following estimates of health personnel available from registers of medical and allied personnel, particularly from the Republic of Nigeria Gazette and Nursing Council as at the dates indicated.

Medical Practitioners	1,978	Dec '65
Dental Surgeons	72	Dec '65
Veterinary Surgeons	77	Dec '64
Nurses - General	10,806	Dec '64
Community	618	Apr. '67
Mental	589	Feb '67
Public Health	93	Mar '67
Midwives - Grade I	4,952	Mar '67
Grade II	6,072	Mar '67

These estimated numbers of health personnel were to serve an estimated population of 50 million - from the 1963 census (Cadwell and Okonjo, 1968).

The Second National Development Plan 1970-1974 was directed to all states to meet areas of deficiencies in health care. The plan aimed to "build a united, strong, and self-reliant nation; a great and dynamic economy; a just and egalitarian society; a land bright and full of opportunities for all citizens; and a free and democratic society

(The Second National Development Plan, 1970-1974).

In the health care area, there was still no specific goal or target designed to combat health problems realistically. Health care continued to deteriorate because the magnitude of health problems in the community were not used as a yard stick for health planning. Available statistics revealed a severe shortage of all categories of health manpower in Nigeria. Dr. Adesuyi (1973) in his speech at a symposium in Nigeria on "Priorities in National Health Planning," provided the following information about the available number of health personnel to serve a population of 60 million.

<u>Categories of Personnel</u>	<u>Number Registered</u>
Doctors	2,683
Dentists	95
Pharmacists	870
Nurses	13,046
Midwives	14,367
Doctor/population ratio	1:30,000
Nurse/population ratio	1:5,000
<u>Health manpower facilities in Nigeria (1970-1971)</u>	
Number of hospital beds	3,500
Other health units	30,000

Many of these professionals lived in the cities with health services rendered confined to urban areas. From the statistics stated above, it

\*Federal Director of Medical Services (1973).



was clear that there were serious health manpower problems. Health manpower requirements became a major issue. In order to correct this, a new approach needed to be designed. Health needs of the community needed to be identified and this in turn would indicate the required personnel. It was clear that the use of doctors would not solve the problem of rural accessibility. Other factors taken into consideration included the length of time it takes to train a doctor, the cost of training a doctor, and the fact that 50% of diseases are communicable in nature and could be handled easily by effectively trained non-physicians. These factors became policy decision for training of non-physicians, which became a major priority for optimum utilization and even distribution of those trained to all the states.

The Third National Development Plan 1975-1980 - This policy dealt with manpower development and comprehensive health care services focusing on the Basic Health Services Scheme (Third National Development Plan, 1975-1980).

The Federal Government of Nigeria has accepted that health is a fundamental human right, that a healthy population is an economic asset to national

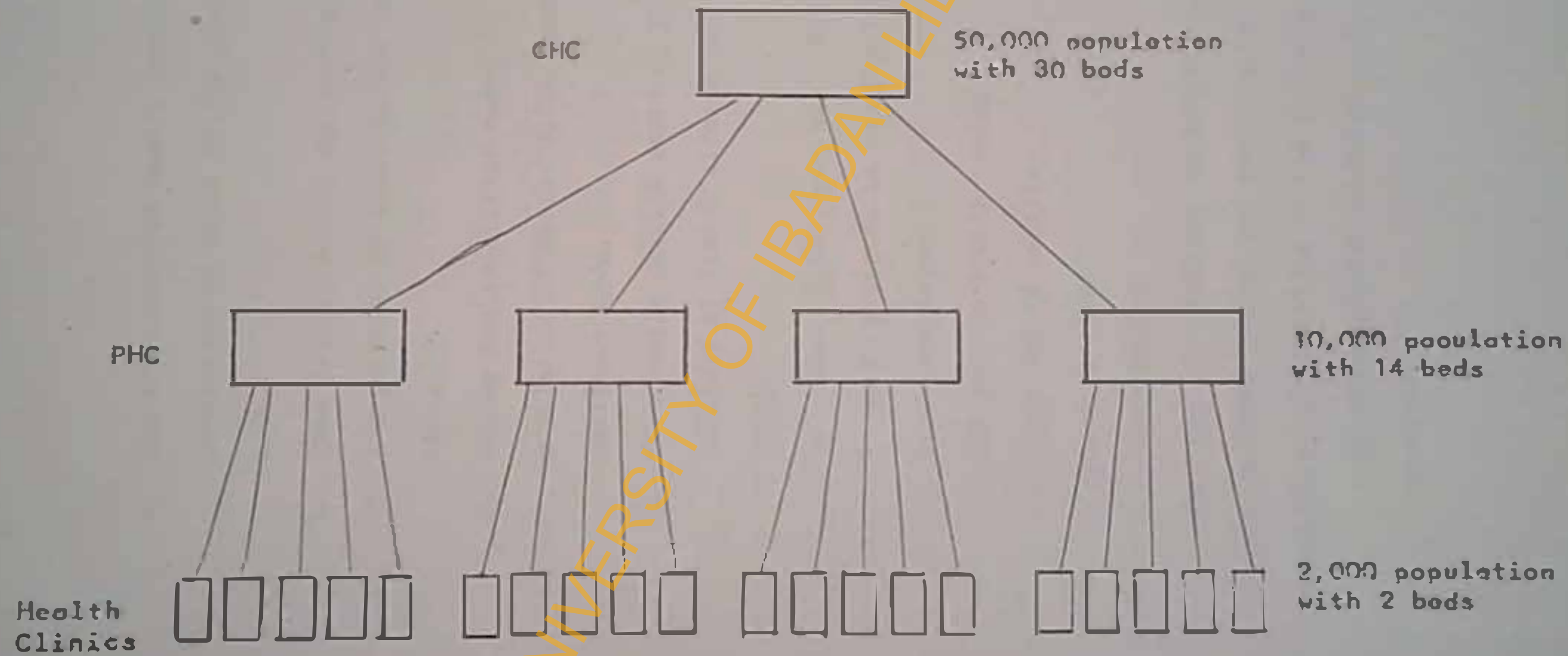
development. Health services must, therefore, keep pace with the growing needs and resources of the people. The gap between curative and preventive health care must be removed through a national health plan advocated by the WHO Report (1978).

The Federal Government of Nigeria seemed acutely aware of the equity problems and appears to have considered expanded health services delivery as well as education to a larger section of the population as an effective approach to ameliorating the problem. Basic health service programmes aimed at increasing coverage from 25% to 100% of the population. It was an elaborate, spectacular and bold programme involving the Federal Ministry of Economic Development and Reconstruction, The National Health Planning Team, WHO organization team, Dr. H. Duran, Federal WHO, Health Economist, Dr. Belminah, Dr. Suleiman representing the Federal Ministry of Health, and Groups of Nationals which later became a National Formulation Team.

The BHSS project was widely accepted and greeted with enthusiasm. The project involved the establishment of some 450 "basic health units" each serving a target population of about 150,000. Each unit was expected to comprise the following:

Figure 1. Proposed Model of Basic Health Unit for the Country

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295 Basic Health Required For The Whole Country.

- a. One comprehensive health center to serve a population of about 50,000 people having 30 beds.
- b. Four primary health centers each meant to serve a population of about 10,000 people with 14 beds.
- c. Twenty health clinics meant to serve a population of about 2,000 people with 2 emergency beds.
- d. Five mobile clinics meant to provide the services of health clinics in the remote areas.

During the plan period, the following facilities were expected to be established for the whole country (see Figure 1).

- comprehensive health centers	285
- primary health centers	1,130
- health clinics	5,625
- mobile clinics	1,410

The aim of BHSB was to achieve comprehensive health service which in turn would remedy the unsatisfactory situation of the following:

- Inadequate population coverage by health services.

- Slow improvement in health status of the nation.
- High prevalence of preventable diseases.
- Underdevelopment of traditional care.
- Inadequate health facilities.
- Lack of cooperation among health services.

Basic health services are best provided through health centers and clinics located in the communities and utilizing non-physician health cadres of workers capable of accomplishing the tasks.

Soon after the launching of the scheme the economic problems in the country brought financial constraints. This affected the level of resource allocation for <sup>successful</sup> project implementation. Currently, the objectives set for the scheme are still being pursued using various strategies to achieve rural accessibility. One of the major problems was providing health personnel, adequately trained, necessary for the implementation of this scheme to provide primary health care in the community.

## 2.10 Primary Health Care Strategy

Currently, PHC has remained a policy statement in the form of certain principles set out in the Declaration of "Health for all by the year 2000" declared at the Alma Ata Soviet Union USSR Conference. (WHO 1978). At this conference, it was confirmed that the health status of many people in the world especially in the developing countries was unacceptable. The low level(s) of effectiveness of BHSS result from low level of coverage. Even where the level of effectiveness is high, the very high level of resources required usually has led to low affordability and cost effectiveness.

The definition of PHC requires changes in the present health care systems indicating that PHC should contain the following features:

- Essential services - providing health care that is relevant to the highest priority problems of the population.
- Practical - using technology that is effective and feasible in providing health care for all.
- Scientifically sound - choosing methods that minimize unwanted side effects and that have been proven to be efficacious.

- Universally accessible - improving the quality of access for the rural population that is geographically isolated from the established urban based health care system.
- Community oriented - stressing collaborative efforts between the community and the health services, each with an active role, thus building a stronger base for overall development.
- Affordable - avoiding investments such as the building of facilities, etc., that are too expensive to maintain, or creating a system that relies on high recurrent costs (salaries, drugs, etc.).
- Self-reliant - increasing the problem solving capacity of communities as a step toward supporting the growth of broader development efforts. As well as of peripheral health care workers.
- Integrated - combining the various interventions in time, place, and person in order to more effectively have an impact on priority problems.
- An ongoing process - providing full coverage to all the people. This would involve promotive, preventive and curative health care services throughout the life of individuals and communities.

The operationalization of these principles has led to the implementation of non-physician programmes of various categories (WHO, 1979, Technical Report Series No. 63, p. 7, "The Training and Utilization of Auxiliary Personnel for Rural Health Teams in Developing Countries".)

## 2.11 Action To Solve Health Problems In Nigeria

The development of non-physician programmes to train community health workers to deliver health care services, especially in the rural areas, has been one measure to solve the health problems in Nigeria. The development of this programme is the policy statement of the government, involving administrators, health planners, professionals and the community at large. It is an action to reduce suffering by providing increased coverage to people in rural areas. Dr. Mohler, Director General of WHO states that "The approach aims at promoting community and individual self-reliance in health" (Mohler, WHO Chronicle, 1978). Table 8 presents components of services to be provided in the community.



Table 8. List of National Programmes To Solve Health Problems Formulated by the Government in Nigeria (1981)

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Health Education

Food and Nutrition

Water Supply

Basic Sanitation

Family Health (MCH and Family Planning)

Occupational Health

Community Rehabilitation of the Handicapped

Care of the Aged

Control of Endemic Diseases

Treatment of Community Ailment Injuries

Essential Drug and Supply

Immunization

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Source: FMOR 1980

## CHAPTER III

### HEALTH SERVICES MANPOWER DEVELOPMENT FOR PRIMARY HEALTH CARE IN NIGERIA

#### 3.1 Introduction

Before the year 1974, health services manpower development in the Federal Ministry of Health was not comprehensive. Adequate goals had not been set to solve health problems. Objectives to be achieved were not defined even for the services delivered. There was no integration between theoretical and practical experience in the field of training of available manpower. No concept existed to team approach of health workers in which the role of various members of the health team are made clear. There was uneven distribution in numbers and in deployment of different categories of health staff relative to population needs, and there was absence of population participation.

In 1974, planned Health Services Manpower Development (HSMD) started with the design of the Third National Development Plan Project Formulation Team by the Federal Government (FMOH July 1976 Report). It was recognized that without adequate

trained manpower, no health programme can be effectively implemented (Project Formulation Team Report, FMOB, 1976). Experts in the area of health manpower development were invited from International organizations by the Federal Government (Pagan, 1976). Experts from the country were also called upon for the purposes of designing an effective training programme appropriate for health personnel to solve health problems in the community. The priority was for development of a flexible training programme which will meet health needs of the community.

In Nigeria, the awareness and the mechanism for provision of adequate health services are present as is indicated in the health policies of national health services. Similarly, the knowledge and expert mechanisms of what the goals should be are available but the attainment of the goals appears to have eluded health planners and clinicians alike. Adedeji, once stated at a seminar about the Nigerian Health Care System, "In no sector is there much incongruity between what needs to be done and how it is best done, and the perception of those who have to formulate what is to be done greater than in the health sector."

(Akinkugbe, et al., 1973)

Morley (1968, et al., 1973) unequivocally stated that innovations were inevitable if actions to solve health problems in the rural areas were to be realized. This notion was derived from his experiences in child care studies for many years in Nigeria. He observed that utilization of non-physicians of various categories with appropriate training would significantly reduce the infant mortality rate in the community. An important aspect of this view and recommendation was that Morley proposed this idea, and it was reinforced by other studies before the WHO Declaration of Primary Health Care ideology in 1978.

Wellson (1971) in his study of "Gbojo Family Health Nurse Project, 1968-1970", established that nurses could effectively provide primary health care to children under five years of age in Gbojo, Lagos. Wellson's study was a demonstration project for the provision of services and evaluation of the end result in the urban setting of the capital city of Nigeria. It was funded by the United States Agency for International Development in collaboration with: the Department of International Health, The Johns



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Hopkins University, USA; Department of Community Health College of Medicine, University of Lagos; Department of Pediatrics, Lagos University Teaching Hospital, Lagos; Federal Ministry of Health, Lagos; Ministry of Health, Lagos State; and Lagos City Council, Department of Public Health.

This study highlighted an important finding to the policy-makers that an effective, economical, and innovative approach, especially of using non-physicians as health care providers could be applied nationwide. However, Wellman concluded that the problem was to gain governmental support and commitment.

Cunningham, (1976) in his study which was conducted in Imesi and Oko Mosi, in an experimental setting confirmed that the utilization of non-physician health personnel to deliver primary health care to children and mothers in two local communities was effective, affordable, and above all, that the personnel were acceptable to the communities which they served. He therefore concluded that this approach could be replicated. Cunningham's study was inspired by Morley's work which was carried out at nearby Ilesho.

The ideology and reality of the primary health care movement are clearly identical in all of the studies cited above, especially in the area of health manpower needs for rural health care providers.

### 3.2 BHSS Manpower Development

Development of BHSS required changes of the National Health Care System in Nigeria. It involved Federal government commitments, manpower training and educational institutions. The process of change and orientation have to begin with analytical reviews of health problems, health needs, manpower requirements with other logistical facilities.

In terms of manpower requirements for this programme, it was important first to have the knowledge of what was available since that was an important factor which would determine the type of new categories and the training which would be appropriate to implement the programme. Important factors also included were geographic and demographic imbalances in states, cultural beliefs and socio-economic differences.

Table 9 shows health personnel reported from various sources from

1963-1970.

From these figures, it may be concluded that the country has always had more nurses/midwives than doctors. The ratio for trained nurses/midwives to the population is more favorable than that for doctors and has been estimated at about 1/4,400. However, some of these nurses and midwives also practiced in the urban hospitals and clinics.

Another vital factor in the development of the present health manpower for the community was that other health personnel who were not registered nurses/midwives could be trained for tasks which they could perform under the supervision of trained CHOs/nurses/midwives in order that the team approach concept could be established. Pendall (1972) stated that people in developing countries must make rigorous attempts to recruit and train various cadres of health workers in order to achieve the rural accessibility which will bring improvement in the health of rural people.

With the establishment of a unified health programme (BHSS) throughout the States, in order that implementation of this magnitude does not jeopardize the function of the existing



organizations, the Federal Government established the Basic Health Services Scheme Implementation Agency. The major concern of the agency was development of manpower with consideration to the number of personnel required in various categories to implement the scheme.

Studies were undertaken in the process of:

1. Preparing job descriptions of the various cadres of personnel needed for the scheme.
2. Identifying the needs and prioritizing these items.
3. Determining what the ratios of the health cadres should be.
4. Assessment of training needs based on the health problems in the community.
5. Designing training programmes to meet the envisioned needs.
6. Development of materials relevant to meet the needs.
7. Spelling out career prospects.

This action marked the beginning of formal training programme. The planning was sensitive to and specific for existing problems designed to be useful for community health workers of various levels. Community Health Officers' cadre is the focus of this study but the training programme for community health workers in general will be discussed to highlight the role of CHOs in the team.

Table 9. Nigerian Health Personnel Reported From Various Sources

Cadre	WHO 1963	Nigerian Yr. Book 1967	Dado* 1970
Doctors	1,508	1,574	2,734
Dent	59	59	82
Pharmacists	454	618	618
Qualified Nurses	7,894	7,894	10,377
Assistant Nurses	1,357	-	-
Midwives - Grade 1	7,763	-	-
Midwives - Grade 2	1,273	7,763	10,816
Community Nurses	-	-	55

\*FMOH (1970)

### 3.3 The Development Of A Training Programme For Community Health Workers In Nigeria

The priority was for development of a flexible training programme which would meet the required community health needs in order to achieve the globally catalyzed statement of "Health For All By Year 2000."

The WHO Technical Report defined community health workers as - "The first contact with the population at the peripheral delivery point. They are to provide promotive health care services in the community. This will consist of basic simple diagnosis and treatment, with referral of complex cases to a higher level. They are to deliver preventive care, especially of educational measures. In general, their task is to help the local people find their own solutions to problems and organize themselves in such a way as to become active agents in their own development." Health services must benefit the entire population essentially by educational measures (WHO, Report 633 1979). Dr. Mahler (1978) Director General, WHO, referred to the need for each country to develop its own plan of action on PHC.

The training of community health personnel for PHC was developed in Nigeria in part as a result of

shortage and maldistribution of health manpower to higher proportion of the populations in the rural areas. The training programme was also in response to people's demand for better health care; and partly because of the increasing cost of medical care.

It had been adequately established in a series of rural health studies that community health workers in a health team with adequate and effective training and supervision could readily handle 90% of PHC problems using their standing orders (Taylor, and Tokulia, 1970; Bamisaye, et. al. (1984).

Available statistics in Nigeria show that over 50% of the morbidity and mortality in our community are due to communicable diseases, most of which can either be prevented or readily treated by application of appropriate health technology with community participation. It is in realization of all these facts that Nigeria has committed itself to the training and utilization of Community Health Cadres for Primary Health Care and a team concept approach.

### 3.4 Concept Of Community Health Workers For PHC Team Approach

It has been demonstrated that a primary health care worker can most effectively carry out her/his tasks and responsibilities as a member of an integrated team. They possess appropriate skills and knowledge necessary to perform certain tasks at various levels. (Skeet & Elliott, 1978; WHO, Ser. 633, 1979)

Health services require a sufficient number of trained personnel working as a team at the most peripheral level. WHO Tech. Report Series 717 (1985) stated that "Countries should take into account various historical, psychological, sociological and scientific factors when developing a rural health team in order to ensure that the composition of the team, particularly insofar as front line and intermediate level personnel are concerned, is appropriate to overall rural development."

In Nigeria, the community health worker "Team Approach" concept consists of three tiers: (see fig. 2)

- Community Health Officers/Supervisor
- Community Health Assistant
- Community Health Aides

Particular emphasis and attention were directed to the roles and responsibilities of each cadre of

workers to facilitate the performance of their expected functions. The roles and responsibilities of non-physician health workers have expanded and an entirely new outlook has emerged (Sendall, 1972; Storms, 1979). The integration of functions in a health team has proved effective, in the form of job sharing among health workers.

The training programme established for health workers was based on health problems in the community. Curriculum content was competency based. The training programme is entirely integrated with practical experience which is the major focus for practicing in the communities where they will be expected to function after training. Thus, Health Centers and their utilization, the community organization and the health habits of the population are all involved very early in the training programme. The general aim of the programme designed by the Federal Ministry of Health is to give the trainees an independent health-oriented, family and community focus role.

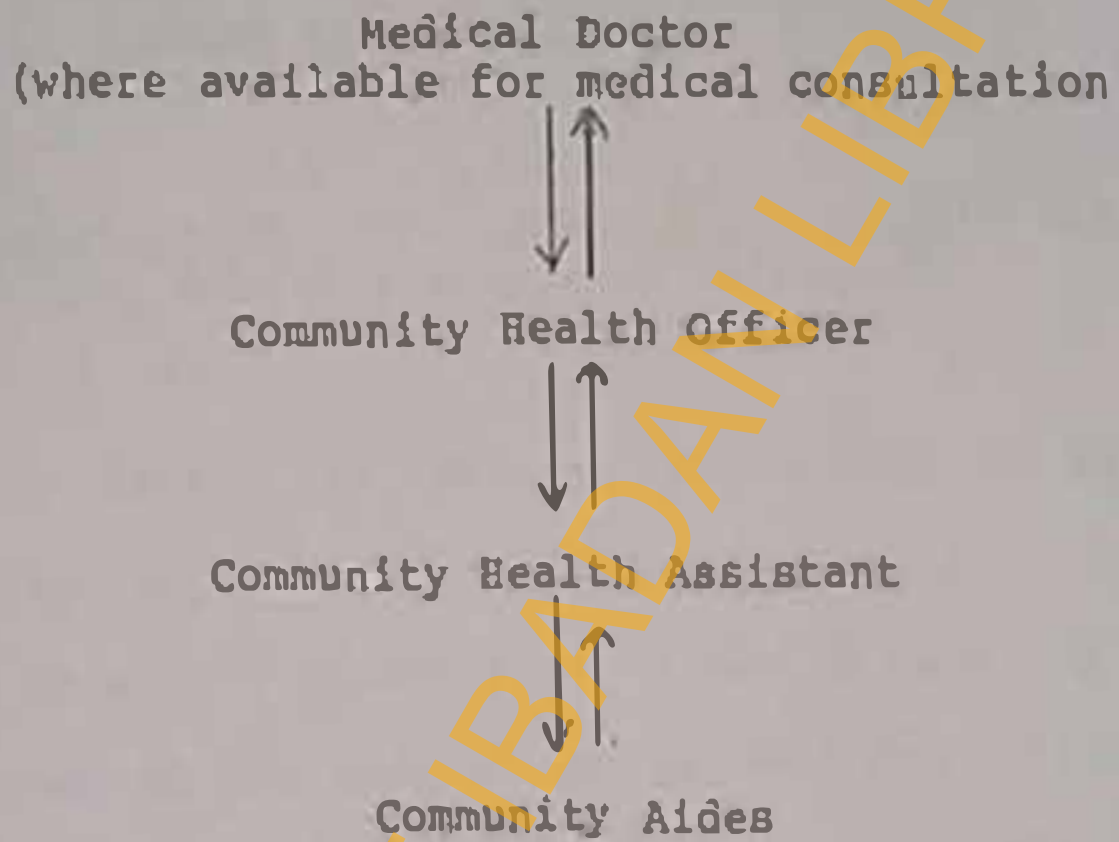
Community health workers are selected from their own States and from the area where they will be expected to work. After the completion of their training each trainee returns to his/hor state of

origin or his/her community to work. This procedure ensures that each trainee is familiar with the local culture and is acceptable to the community. Schools of Health Technology train Community Health Assistants and Community Health Aides while higher institutions train the Community Health Officers who are the focus of this study.

The Community Aide's role is in the community. Generally, her job is technical and requires low-level health work in the clinic and in the community. Period of training is 12 months on-the-job. Prerequisite to training is her willingness to remain living in the rural community, her understanding of the norms of the community and her ability to identify feasible local solutions to local health problems.

The Community Health Assistant (CHA) training curriculum is similar to the Community Health Officers' except in the administrative functions (Unit 3). The CHA is responsible to the Community Health Officer and has direct supervision from her. The CHA in turn is responsible for the supervision of community health aides. Because of this vested responsibility expected of a CHA, she must have the ability for possible educational and professional

Figure 2. Concept of Team Approach and Its Relationship Within the PHC Concept





development as well as the ability to accept or give instructions and act accordingly. Above all, he/she must be willing to serve in rural communities and maintain contact with families.

### 3.5 Development Of Community Health Officers (CHOs) Training Programme In Nigeria

In 1979, the Federal Government of Nigeria formally approved the training of CHOs. CHOs are vital component of the present health team and they in fact are at the apex of the pyramid for delivery of primary health care in rural areas. Selection should be from among the following categories all of whom are already qualified as some category of health professionals.

- Public Health Nurse
- Community Health Supervisor
- Community Midwifery Sister
- Higher Rural Superintendent
- Nursing Sister/Superintendent

### 3.6 Aim Of The Programme

The training seeks to develop skills, knowledge, and correct attitudes in the following

areas:

1. Health maintenance and health promotion.
2. Diagnostic skills and ability to manage common physical and developmental health problems using approved standing orders.
3. Organization and management, including supervision and evaluation.
4. Team work.
5. Community mobilization and health education.
6. Teaching health workers.

The role assigned to a Community Health Officer is very important and therefore she must possess the ability that makes it possible to accomplish service activities through the team effectively. The managerial ability must be unique to enable her to relate to the team, the community, and the authorities above her. She must have the ability to make plans based on clearly defined objectives and must know how to implement the plan using sound judgement/decision. This in most cases will involve service resources, e.g. drugs, equipment, etc. She must possess the ability to recognize and evaluate the degree of achievements based on the initial objectives set up.

The success of the team work depends on how effectively she/he is able to relate, coordinate and harmoniously organize activities so that primary health care and community participation objectives are achieved. McMahon, et. al. (1980).

### 3.7 Training Program For Community Health Officers

The overall sequence of training programmes for community health personnel including CHOs was designed using functional task analysis.

The analysis was based on the health needs or health problems in the community which in turn determine the direct services and activities needed to meet a vast array of health needs on different levels. From consideration of the health problems, tasks to solve them and the descriptions have been broken down into the skill, knowledge and attitudes necessary to perform them.

These components have been stated in performance or behavioral terms, i.e., what the trainee will be doing after he has learned what is necessary. Categories of health workers were

assigned to carry out specific functions and tasks taking account of where they were, at what skill level, and with what frequency.

### 3.8 Community Health Officers' Curriculum (See Appendix 7)

The aim of the curriculum is to give the trainee an independent, health oriented, family and community focused role. This is a change from the previous illness-oriented and dependent role of most health workers. The curriculum encompasses interdisciplinary instructions in the social and behavioral sciences, biology, epidemiology, demography, statistics, nutrition, growth and development and administrative techniques of primary health care. It is divided into 3 units (see Tables 10-12). Within each unit the trainees receive integrated instructions in medical and psychosocial courses thereby giving them a total picture of the health care problems.

The training process and setting simulate as closely as possible the role and setting in which the student is expected to function after training.

The classroom is used to teach contents necessary to the understanding and performance of

tasks but the primary learning sites are the service setting and the community.

Practical education training is the most important part of the curriculum, and coordinates direct family care in the community with the basic courses. The practical aspect of the curriculum forms the core of the programme. Twenty-five percent of the contents of the curriculum is theoretical while 75 percent is assigned to practice in various forms such as clinic and field activities, research practice; case studies, role play and private tutorial.

The length of study is one academic year at any of the institutions prescribed by the Federal Ministry of Health.

#### Description of CROs' Curriculum Units

-- Each unit has as the general aim that the trainee acquire skill, knowledge and correct attitude.

-- Each subunit has a general objective clearly written. Each subunit represents functions which would need to be broken down into tasks in order that a health worker could achieve the

objective.

- Each task has a specific or instructional sequence which if systematically followed, would enable the health worker to effectively perform the task and therefore achieve the objective thereby.

#### Example From CHD Curriculum

Unit 1: Nutrition

General Objective

- Assess Nutritional Status

Instructional Objectives

- Establish rapport
- Indirectly assess nutrition by checking pattern of feeding.
- Mother's knowledge of food sources and preparation.
- Directly weigh child.
- Measure arm circumference.
- Interpret and record findings.
- Counsel mothers.

All of the above instructional objectives are measurable because they are indicators to measure the general objective of assessment of nutritional

status in Unit 1.

### Unit 1 - General Health Care

CHO activities are directed toward diagnostic techniques and communication skills in order to interact with people for health care delivery. Surveillance of communicable disease and health care information monitoring is an aspect of the unit.

### Unit 2 - Personal Health Care

CHOs efforts and activities are directed towards giving direct health care to people of all ages. Activities include delivery of curative and preventive care. History taking, performance of physical examination, treatment and counselling of patients are components of this unit. Disabled people and the aged are also included as special categories of people in the society needing care. However, health of mothers and children, especially preschool, is basic and is more frequently provided than any other group.

### Unit 3 - Management And Organization Techniques

CHOs activities are directed toward general management of health facility settings which includes administrative techniques for day-to-day smooth running of clinic activities; knowledge of how to get the necessary resources - logistics, i.e., drug supplies, equipment and transportation from appropriate authority, and how to maintain the items; supervision and teaching of lower cadres; and the important knowledge of working with the community are essential parts of this unit. In summary, the three units combined form the functions of CEOs in the community.

#### 3.9 Standing Orders For Community Health Officers

This is an important and vital factor for effective performance of functions. Standing orders form the core of information in which priority areas of service expected of them in the places of work setting are closely written for the use of all workers at various levels of skill, knowledge and attitude (Ransome-Kuti, 1975).



**Table 10. Unit 1: General Health Care**

The aim of this unit is that trainees should develop skills in the following sub-units.

- 1.1 Health Education
- 1.2 Environmental Health
- 1.3 Control of Communicable Diseases
- 1.4 Nutrition
- 1.5 Accident and Emergency Medicine
- 1.6 Dental Care
- 1.7 Community Mental Health
- 1.8 Use of Standing Orders
- 1.9 Diagnostic Services
- 1.10 Health Statistics

Source: CHO Curriculum

**Table 11. Unit 2: Personal Health Care**

Is concerned with teaching preventive, promotive and curative measures that deal with Family Health sub-units.

**2.1 Maternal and Child Health**

**2.1.1 Pre-school Child**

**2.1.2 The School Child**

**2.1.3 The Maternal Health**

**2.2 Occupational Health**

**2.3 Care of the Aged**

**2.4 Care of the Handicapped**

**Source: CHO Curriculum**

Table 12. Unit 3: Organization and Management of Basic Health Services

Sub-unit:

- 3.1 Supply of drugs
- 3.2 Management of health services and clinics
- 3.3 Referral services
- 3.4 Community involvement
- 3.5 Mobile services

Source: CHO Curriculum

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## Description And Functions Of Standing Orders For CHOs

Standing orders provide methods and techniques which help CHOs to solve health problems. They guide the CHO and reinforces the skills and knowledge she acquires in the training institutions.

They enable her to effectively:

- Give immediate treatment to the sick in terms of being able to treat minor symptoms and complaints presented.
- Know what to do for more serious cases, i.e., "refer."
- Give preventive advice as an integral part of all activities.

Standing orders consist of lists of diseases, conditions or abnormalities according to the accompanying signs and symptoms. Most of the time a patient will have more than one sign and symptom. The Community Health Officer has to judge, based on her training programme, from which combinations of signs and symptoms the patient suffers and treat in accordance with the appropriate standing order.

### Example

Whenever a CBO sees a sick person, she should always:

- a. Find out what the signs and symptoms are, when they started, and what the family has done so far. This is taking history.
- b. Examine the patient, the whole body from head to toe and make general necessary observations, e.g., breathing, crying and activity. She also feels for fever.
- c. Refer to the main abnormality in the standing orders and take temperature, pulse, respiration, blood pressure, and make specific laboratory examinations such as testing urine or estimation of haemoglobin.
- d. Give treatment, medicines, advice and explain or demonstrate to patient how to continue treatment and administer the medicine.
- e. Explain to patient about preventable conditions - the causes and how to prevent the condition in other members of his/her family, i.e. health education.

- f. Plan for follow-up or referral.
- g. Record findings in an official record.

For effective delivery of health care it is essential that all Community Health Officers possess and make use of the standing orders to facilitate decision-making in their day-to-day activities. Apart from the use of standing orders for direct services, supportive services are also divided according to the inputs which will be channeled into direct services and their necessary activities.

### 3.10 Institutions And Faculty

Higher institutions based in universities have been given the responsibility for training CHOs. To this date, 9 institutions are involved in CHO training programmes in Nigeria. The Primary Health Care Unit (PHCU) is the supervisory agent responsible for coordination and policy for the training of CHOs in the country.

The head of the department where the training takes place is charged with the responsibility for the implementation and completeness of the training programme. However, the pattern is for the head of the

department to delegate a coordinator who is mainly responsible for running the training program under his supervision. The policy, the facility and financial resources of each institution are important determinants for satisfactory completion of the training programme in each institution, for example number of full-time faculty available to teach throughout the session is considered an important factor. Also, since the guidelines from the Federal Government emphasize intersectoral coordination in the training of CHOs, professionals involved in teaching CHOs should include medical doctors, dentists, sanitarians, nurses, accountants, statisticians, engineers and sociologists.

Method of teaching include didactic teaching for formal lectures. Other methods used include case study, role play, clinical practice, and research practice.

Institutions undertake pre-test of students before admission. This is a technique of assessing student background for preparation before admission. It is to assess trainees' baseline health care background or skill level which saves teaching time. Students who are successful in the pre-test are offered admission.

### 3.11 Selection

Criteria for recommending candidate for training rests on her State of origin but according to the guidelines, <sup>he</sup> /she must have managerial ability to guide, supervise and head other team workers.

He/She must have a sense of responsibility, and dedication to her work activities and to the communities. He/she must have initiative to exercise independent judgement, and must be prepared to work in rural areas.

### 3.12 Evaluation

At the completion of training all students from all training institutions take a national examination. Candidates who are successful are then awarded the National Certificate and are free to practice as Community Health Officers in their States of origin. Some institutions such as ICH Logos conduct examination for their students and award certificates to successful candidates.

### 3.13 CHO Scheme Of Service And Incentives

During the planning stage of this training programme which included all other PHC cadres,



income and career structure were proposed, but they were not implemented officially at the Federal Ministry of Establishment in Lagos.

From personal information gathered at the Federal Ministry of Health it was felt that CEOs were already professionals, therefore, they already have scheme of service. To draw a new one will create conflict amongst other existing health professionals.

However, the recommendation was that any person who completed the course and returned to her State of deployment should move up one step from her previous level of income or salary.

## CHAPTER IV

### REVIEW OF THE LITERATURE

#### 4.1 Introduction

The review of the literature in this study will be multi-dimensional. This study is concerned with the evaluation of community health officers' job performance at health facility settings and identification of factors which might enhance or hinder their performance. Based on this issue, efforts have been made to:

- a. Define the term "Performance Assessment" which will be followed by discussion of evaluative studies in job performance of health workers.
- b. Define and discuss a methodological approach for performance evaluation - Task and Functional Analysis which is the operational research method employed in this study.

## 4.2 Performance Assessment

Performance is related to tasks and responsibilities.

Katz and Snow (1980) defined performance assessment as "The measurement of an individual's ability to carry out a specified task." These tasks become activities related to the whole range of skills, knowledge, and attitude acquired through training. It also involves putting into practice the organization and integration of these activities. Furthermore, the authors continued, performance assessment if carried out under simulation conditions, should give more accurate and valid reflection of actual performance. Hence, activities whether clinical or administrative that reached a satisfactory completion stage according to preset criteria is a function of quantities of activities. By contrast, quality assessment of activities or services in certain cases might usefully concentrate on examining specific skills and knowledge of staff.

Weiss (1972) defined assessment of worker's performance as judgments of merit against some implicit yard stick. The intent is always to

measure the effect or objectives set for a particular purpose. For example, training, in order to improve worker's skills and knowledge which in turn would improve the quality of services rendered by the workers. Other authors who shared this view include Shortell and Richardson (1978)

Segall et al. (1975) stated that assessment of performance in their own view represents the most desirable or satisfactory execution of the responsibilities associated with professional role. This they referred to as optimal professional performance which involves three steps.

- a. Identifying future professional roles.
- b. Listing the professional responsibilities involved in these roles.
- c. Analyzing the skill, knowledge and attitude components of each of these professional responsibilities.

Furthermore, the authors described activities involved in professional responsibilities for which trainees would be accountable in their future professional roles and tasks they would perform with competence. These included performing activities, making decisions, following procedure, collecting information and evaluating an activity. Though

knowledge, understanding and appreciation are essential in carrying out these responsibilities it is the application of these elements by which professional performance is judged for which the training will be designed. Therefore, performance as defined in this study is related to members of a health staff in the fulfillment of a role and its associated responsibilities. When performance assessment is being applied to generate process evaluation information, it is assumed that a completion of the activity according to some pre-set criteria will be accomplished.

Ebel (1972) viewed performance assessment as a dimension of supervision, and felt that when staff are assessed based on some factors, it could serve as motivation in health system effectiveness if favorable or it could reveal weaknesses which require action such as continuing education.

Evaluation should be based on clearly defined objectives. Miller (1973) stated that formulation of any effort is based on definition of the objectives of that particular effort and the ways in which these objectives are specified.

Holland (1983) gave two reasons for this:

1. Monitoring of performance is impossible without objectives.
2. If there are no objectives, there is nothing to measure.

Many authors also have put forward guidelines for the formulation of objectives. These authors pointed out that it is important that objectives should contain criteria against which the activities of performance can be measured (Guilbert, 1977; WHO, 1977).

#### 4.3 Limitation Of Previous Research On Cohort Non-Physician Health Providers

Despite the importance of the significant role that non-physician providers occupied in the community to solve the problem of shortage of doctors and the recognized influence their utilization have in relation to cost containment in developing countries, there are only few reported studies of their performance (Parlato and Favin, 1982; PARO, 1980). Certainly in Nigeria there is a paucity of studies that focused primarily on examining the characteristics of non-physician providers in the community. However, the few

descriptive studies available demonstrated the effectiveness of non-physicians in the provisions of primary health care in the community. For example, Morley (1968, 1973) acknowledged the effectiveness of non-physicians in child care in Nigeria. Wellman (1971) effectively utilized non-physician providers in his project "The Gbaja Family Health Nurse Project, Lagos." This was the first study which directly and formally documented the effective utilization of nurses as providers of primary health care in the community. This study served as a pilot project which recommended the use of nurses with appropriate training as a nationwide programme. Other studies included Cunningham (1976) in Nigeria. The most recent study Reyes (1983) demonstrated the effective use of family health workers in the study "Mothers Management of Child Diarrhoea in Lagos."

In all the studies cited above, there was none that specifically examined characteristics of non-physician providers in relation to formal training and factors which could enhance their performance as a group in Nigeria. This presentation will now turn to literature on health workers with characteristics related to job performance in various settings and factors identified to affect their performance.

#### 4.4 Literature Relating To Evaluative Studies In Job Performance Of Health Workers

Approaches to evaluation of health services, especially in the developing countries in the past have relied on descriptive evidence, Dutt (1963) King (1966) and Bryant (1969) exemplify such descriptive techniques.

Bryant described performance of health workers from brilliant to incompetent. Furthermore, he noted that capabilities depend on factors such as prior training, appropriate training, utilization pattern, continuing education and supervision.

Similarly, Morley (1973) described his personal experience based on his involvement in child health care services for over 20 years at Wesley Guild Hospital, Ilesha, Nigeria. He used nurses effectively to diagnose and provide treatment for common illness. He described the skill pyramid and suggested delegation of tasks to the front line health personnel with less training than doctors to perform a high proportion of tasks. The majority of the health problems/communicable diseases and 90% of them could easily be handled by non-physician personnel.



Another study which demonstrated the effective use of non-physician health personnel in Nigeria was that of Cunningham (1976). In his study titled "The Under-Fives - What Difference Does it Make?" nurses in an expanded role were found effective in providing curative, <sup>and</sup> preventive services for reducing child morbidity and mortality.

Currently, the ways in which PBC has developed in the quest for health care for all requires objective assessment of health service delivery by scientific principles. Such empirical studies would allow for understanding of each component of health care system in the country. This issue was addressed at the XVth CIOMS Round Table Conference in Ibadan, Nigeria (Bankowski and Bryant, 1982).

In Nigeria, some studies limited in scope which/evaluation of non-physician health personnel have been carried out. The reasons for this are many. Among them are: Lack of research funds and to execute operation research. Lack of appreciation of its importance. Of significant importance is the lack of appropriate methodological research tools to evaluate performance in health services.

Mojekwu (1973) conducted a survey "Study of Educational Planning for the Training Of Rural Health Workers" for children under five years in the East Central State of Nigeria. The study dealt with effectiveness of training and efficacious treatment. The author attempted to link learned skills and knowledge to field performance on the bases of a "hypothetical model" "RUFTON" developed by her, based on a task checklist designed by herself and validated by a panel of health professionals and administrators.

Her findings revealed poor performance of these cadres in the field. The reason given for this ranged from low level of education amongst students, to problems in practice areas such as lack of supervision to ensure that tasks taught in schools were performed in the field. Schools taught 37.7% of treatment tasks and 31.5% of preventive. Among the three professional groups she observed, Community Nurses performed better than Midwives, who in turn performed better than dispensary assistants. She concluded that auxiliary training schools were deficient as agents which could assist in lowering the under-five mortality rate. Mojekwu's study was of significant value and

bears similarity to the present study. However, her model was implemented on graduates of different training programmes in Nigeria without a common denominator such as training programmes with set objectives. Training curricula based on health problems with instructional objectives to achieve success in the skills and knowledge the training education intends to teach were not available. The trainees have no role definition nor job description. Didactic teaching was not linked with field practice and there was a lack of supervision. Furthermore, the author observed 50 students in the field and scored their performance arbitrarily on tasks taught in the classroom and tasks performed in the field using her model developed from a "hybrid curriculum" based on 4 communicable diseases in East Central State of Nigeria. There was no objective indicator for assessment. Her model is rather inadequate for evaluating the present study which proposes to look at the performance of a group of graduates of similar training programmes which are measurable.

Parker (1975) conducted a survey on staff members of the Somolu Clinic, Institute of Child Health, Lagos. The purpose was to generate data on

the time distribution of various categories of health workers in various activities. Data was collected in one day between 9 a.m. and 12 noon. His findings revealed that 37% of health workers' time was spent directly attending to patients, while 44% was spent performing supportive activities, e.g. administrative duties, teaching or other clinic activities such as organization of the health center to ensure smooth running of various activities. Other findings revealed that health workers spent 10% of their time waiting for patients and during 9% of their time they were found doing nothing.

Abodunde, et al. (Nigerian Medical Journal In Press), conducted a similar study, at the same clinic for the same purpose. The data collection lasted one year with data collected for a total period of 18 days, i.e. 1 week at an interval of 4 months, 9 a.m. - 12 noon daily.

The result demonstrated that non-physician health personnel who had had additional training could effectively handle over 50% of PHC functions without a doctor's supervision. The distribution of time spent among various activities by health workers revealed by their findings was found not to be significantly different compared with Parker's

findings. 36% of health workers' time was involved attending to patients; 42% was spent in supportive activities; 9% spent in waiting for patients while 12% of their time they were found doing nothing. Some research projects carried out in India have shown that with appropriate training and supervision, non-physicians can readily handle and effectively take care of 85-90% of primary health care problems without consulting a physician (Taylor & Takulia, 1970, 1971).

In Guatemala, 99% of all health problems were handled by primary health care personnel called Health Promoters (Newell, 1975). Other countries which have reported significant results by using non-physician personnel include Jamkhed in India and Yugoslavia (A joint UNICEF/WHO study, 1975).

Other studies which addressed performance evaluation in other countries include a study conducted by Clute (1963) in Ontario and Nova Scotia, Canada, to examine the quality of medical care among paired private physicians in private practice. The aim was to determine its strengths and weaknesses using an observation method, questionnaire, and daily diary. Clute observed medical functions at various settings, e.g. offices,

homes and hospitals. He used a random sample technique and obtained 54 physicians in Ontario and 42 physicians in Nova Scotia. He chose categories of functions which would be easily observed and decided on certain criteria of measurements. He later used a standard scale and ranked the score as a measure to judge quality of medical care. The study he described was tedious and time consuming. The quality of practice he observed ranged from excellent to extremely poor.

Even though Clute's study was conducted on physicians and addressed the quality of medical care, there is a basic principle applicable to the present study - assessment of job performance and factors which influenced it in order to improve people's general well being.

In another study conducted by Hart in Tanzania (1977) "Analysis of Tanzania's Medical Assistants and Rural Medical Aides," the study was conducted in order to identify various activities performed by divergent categories of health workers and factors that influence the pattern of service provided. These were skills, attitudes and knowledge that the trainee bring to his work and working environment as well as the utilization

pattern, such as living in rural areas with a small income. His study was longitudinal (1973-79), on several graduates. It was also an experimental study between health workers in two different areas.

The investigator assessed the health workers at various facility settings. He developed 12 routine tasks related to health problems which are frequently performed at clinics. Criteria for measuring performance was not determined based on trainees curriculum, but arbitrarily because health workers did not have job descriptions. He used observers for assessing the quality of performance for five days for data collection.

He generated results that revealed that Rural Medical Aides in dispensaries spent greater time (50%) delivering services than medical assistants at health centers (35%), and medical assistants at hospital outpatient departments spent the greatest amount of time (61.2%) performing similar services.

Availability of medicine played a vital role in the care of patients; the less the availability, the less the case load of patients.

Regarding the attitudinal self-rating of rural workers' skills compared with their colleagues, on a 4-point scale (poor = 1, fair = 2, good = 3, and

excellent = 4), the investigator reported that both cadres ranked an overall ability of "3" without significant difference. The investigator found that, in all the attitudinal self-rating questionnaires, all cadres ranked themselves high.

Bart's study has a similarity with this present study in terms of asking workers to rank their perceived abilities. However, his methodology was rather subjective and, therefore, will not be applicable to the present study which proposes to use objective methods to measure observed performance which will be based on CBOs curriculum and job description.

In a study by Moen (1979) to evaluate curriculum contents of a cohort of physician assistant graduates and its relationship to their job performance at various primary health care settings in ambulatory practice in the U.S.A. he developed a model called "Task Identification Manual" for all the observable tasks taught and not taught in order to measure job performance.

This investigator based his assumption on the fact that all the relevant tasks in the physician assistant's curriculum to perform primary health care have been taught. Therefore the objectives of



the curriculum achieved. Based on this assumption, to assess performance of physician assistants after training using tasks derived from this curriculum was valid.

His findings revealed that physician assistants on average spent about 90% of their total time performing data gathering, minor diagnosis, ordering and evaluating routine laboratory tests and in some cases, treating and counselling patients without direct supervision by the medical doctor. His other findings also revealed that legal restrictions, willingness of physicians to delegate tasks as well as lack of field experience were the major limiting factors for full utilization of learned knowledge and skill of physician assistants in providing health care in ambulatory settings in the U.S.A. Job performance of physician assistants is under the supervision and authority of physicians in ambulatory practice. How physician assistants are used after training is subject to several constraints, e.g. decisions on what tasks physician assistants could perform would rest on the physician with whom the physician assistant was working. The investigator therefore had to compile tasks taught in the schools and tasks learned and performed in

the field practice. For the purposes of analysis, he measured a number of tasks performed as taught against a number of tasks taught. Tasks done as taught was influenced by variables such as pattern of task delegation, supervision and availability of work performance standard (denominator). Tasks done (numerator) were confined to numbers of observed tasks done defined in measurable terms according to the training objectives.

Even though this study addressed many issues common to health manpower training and evaluation of job performance, there were several limitations such as a lack of job description which limited the model from being able to adequately evaluate physician assistants' job performance. Therefore, the model is not applicable to the present study. Generic training, utilization pattern, and organizational problems of physician assistants in the U.S.A. differ from the set-up in the developing countries. In this study, tasks taught in CHOs' curriculum would not be subjected to constraints similar to those of physician assistants at the practice settings. CHOs' curriculum has objectives and a job description with criteria that would be

used for measurement.

Another study conducted by Young (1984) on the analysis of Barefoot Doctor's (BFD) activities in China and factors that influenced their performance, used questionnaires and observation techniques on 84 BFD in two community health centers in China supervised by a brigade. The investigators correlated BFD's activities with predisposing variables such as demographic data, education, training and length on the job. On enabling factors, she used socio-economic factors, i.e. financial resources, remuneration and supervision.

The investigator used a team of 9 observers and 3 supervisors to conduct the observations and interviews within 3 weeks, 2 days at 6 hours a day using a work sampling method technique on 84 BFDs and 60 Brigades randomly selected.

Her findings revealed the distribution of time spent by BFDs in various activities - 26% was spent in curative health care, 3% in preventive with the balance in supportive services.

No correlation was found between age and training. This was due to variability in the content and quality of training of BFDs. Training is provided by different teachers, through different

curricula and training is rather informal. Sixty-six percent BFDs considered their training adequate. Other findings revealed no positive relationship between training and length on the job. Duration of initial training, the years of practice, have no association with performance of preventive medicine. BFDs total income was strongly associated with a proportion of side line activities - they are part-time peasant health workers and engage in farming when not performing health duties. The investigator obtained useful findings, looking into various factors of interest on several variables relating to BFD's and the health care system which has received international recognition for success.

The investigator's methodology is valuable in this study as also is the analysis, but the set-up of BFDs is not comparable with this study. The investigator herself confirmed that several factors relating to BFDs and health care delivery in China might not be ideal to transfer to other countries.

#### 4.5 Task and Functional Analysis Defined - Historical Background and Methods

Effective method for evaluating performance of workers, especially in health services research are increasingly being sought in professional education.

orthodox method exists which measures students' ability based on the scores from paper and pencil test plus intuition. While these tests can measure knowledge and intellectual ability with some degree of accuracy, they fail to measure that which professional education intends to teach, i.e. the ability to perform expected in real life situations. A major issue in this study is an attempt to develop an appropriate method to evaluate CBOs' performance.

In the survey of this literature on this topic, <sup>attempt</sup> first on/will be made to define task and functional analysis followed by historical development. Task analysis is a process of determining the activities and tasks performed in the course of doing a job (Davis and Taylor, 1972). It has recently been applied to the health field (Robin, 1972). It has a flexible method with demonstrable usefulness. The method can be used for performance assessment of health workers (Katz and Snow, 1980). For this

purpose, workers' jobs or functions, which are many and complex, are broken into discrete elements or several components which are measurable and observable. Assessment of workers in the process of performing these tasks in clinical areas can be measured, using pre-determined criteria in order to determine that the workers are performing what has been taught. Task analysis is also used as a management tool, and can be employed in writing job descriptions for health workers.

Task analysis has its roots in various techniques of methods of analysis of industrial engineers. They were concerned with achieving functional effectiveness of human performance. The work of Verdier (1960) and Miller (1966) provided the framework of task analysis in industry.

Verdier, in his own descriptive study, defined a task as: "...a limited and orderly grouping of individual human activities applied methodically to things or equipment (or humans) for the purpose of satisfying some problems or needs." He then related these tasks to the jobs of workers and divided them into small, discrete activities having a start and a completion time.

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Miller (1966) used task analysis to evaluate the workers' relationships to machine and work flow. There is one common element in these studies cited above. They are all assembly line experiments using the industrial model to describe the worker's performance in relationship to machine, production time path, and work flow.

The focus of this study is addressing job performance in the maintenance of health and the factors that will influence it. Such factors are training programmes, while other factors at the practice setting include availability of drugs, and equipments. The industrial model will be inadequate. Methods of production of health services are different from those involved within assembly lines. Assembly line tasks are discrete and repetitive while health services are complex and overlapping. Workers need to adapt medical tasks to individual needs using technical knowledge and independent decision making.



A study which linked task analysis with training using "task inventory" was that of Morsh et al (1966) in training the Armed Forces. Data from task inventory are particularly useful for certain purposes, such as identification of job types, or the planning of training curricula. Task inventories comprise a structural job analysis questionnaire that consists of a listing of the tasks within some occupational field. This methodology has also been adopted by military services in the U.S. and other countries (Archer and Prucher, 1966; Melching and Borchert, 1973). The problem associated with task inventory, however, is that it does not provide the chance of collecting information on the interactions during task performance. It deals mainly with frequency of occurrence.

The U.C.L.A. Allied Health Professional group performed one of the most elaborate job inventories. The reason for the inventory was to develop curricula and instructional materials for training new health workers.

Systems analysis has only recently been applied to the problems in health care. It deals in particular with the definition of the functions

of primary care manpower. It examines the functions of individuals and divides these functions into tasks. Similarly, it also defines each task by a set of elements or steps in task performance and by the complexity of each task.

Golden (1978) in his study which combined both system approach and task inventory technique, developed task inventory which provides a training module for primary health care practitioners. Further, the author devised ordinal "scales" that are specific and sufficiently generic to the three areas of educational domains: cognitive, affective and psychomotor - these "scales" measure the allocation of learning resources in terms of the assumed difficulty of the task and the level of skills and knowledge needed. The scales may also be useful for curriculum design and educational planning.

Studies which addressed task analysis in relationship to knowledge and curricula are those of Beauchamp (1961), Mager (1962), Krathwohl (1964) and Harrow (1972). By introducing behavioral objectives definition into tasks, the importance of linking elements applicable to curriculum design to educational objectives was recognized. The elements

of behavioral objectives are conceived in terms of activities by which the learner must demonstrate that the learning process has taken place. What is learned and application of its content are then linked to the curriculum.

Gilpatrick (1972) discovered that the operational definition of behavioral objectives as the unit of analysis has not yet been developed. Therefore, by redefining tasks into learnable skills, she attempts to link work performance to education of workers for the purpose of retraining the worker for upward mobility on the job ladder.

The works of Gildford (1967), Wiley and Fine (1971) have a great effect on "functional job analysis." The studies described human performance as complex and divided it into three various skills: adaptability, functional, and specific content skills. These three skills are interrelated, adaptability being pre-condition for acquiring functional skills, and where both adaptability and functional skills apparently are the pre-condition for acquiring specific content skills. The author further stated that judgement of the effectiveness of performance is based on specific content skills, but ineffective performance

is often a failure to acquire functional and/or adaptive skills. Therefore, functional skills refer to those competencies that enable an individual to relate to things, data and people (Beauchamp, 1961).

On the basis of this study, Fine devised worker-function scales for measuring work performance in terms of the proportion of skill needed to accomplish the objective and for which functional levels and orientation can be assigned.

Gilpatrick, however, found that although Fine's original definition dealt adequately with the importance of technology, mental and interpersonal activity, the method failed to provide a reliable guide for dividing the work activities carried out by a given performance.

In the field of health services research, the Department of International Health of the Johns Hopkins University has developed a systematic approach for assessing and matching health needs and services. They also use the term "Functional Analysis" for the approach. Analysis of health worker tasks and activities is a significant component of this approach.

Between 1965 and 1970, the department developed practical methods for operation research with the functional analysis model. About 10 years ago, Nigeria was one of the countries where some of the methods of functional analysis was applied for health manpower studies.

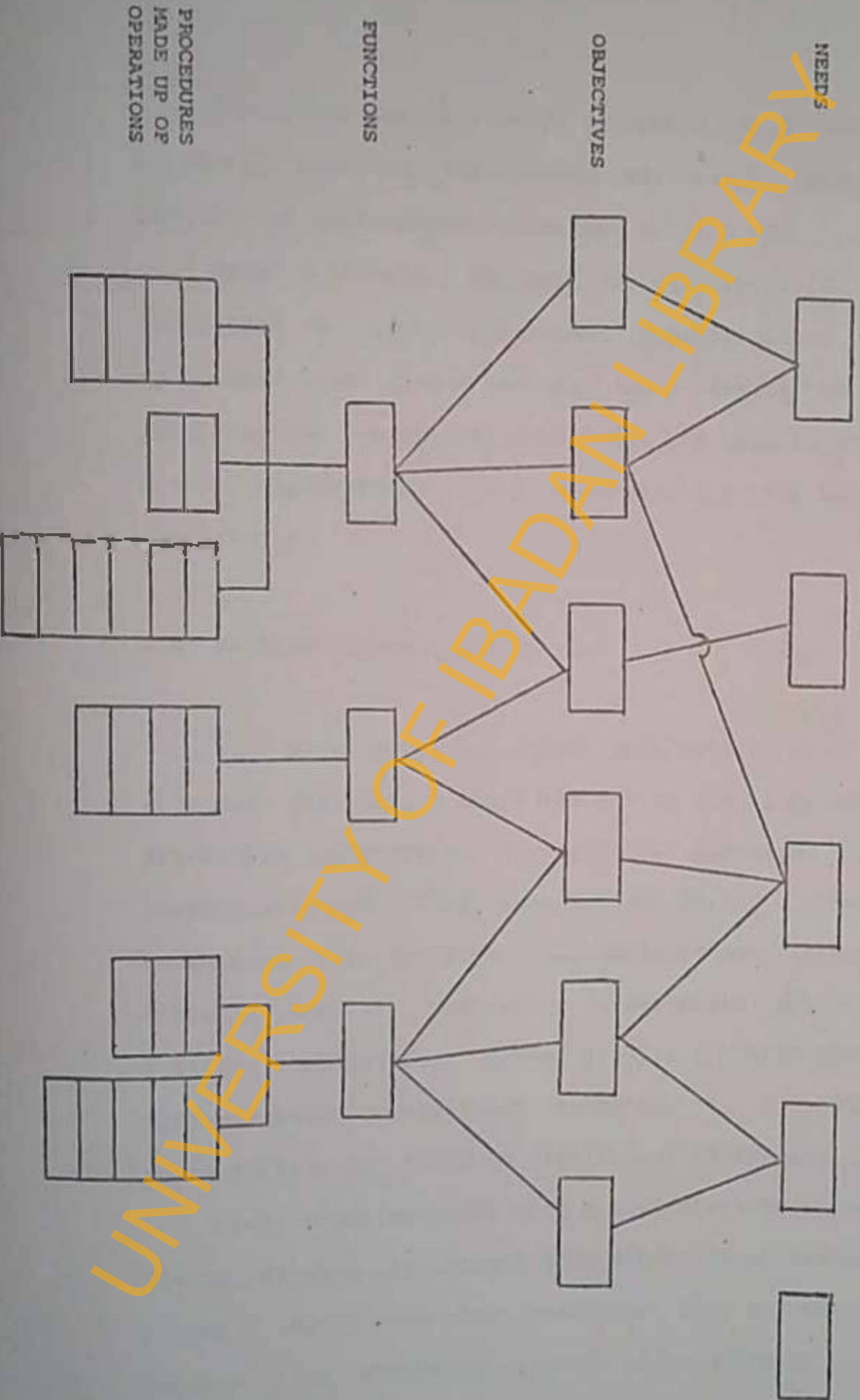
The conceptual framework (see Figure 3) underlying this methodology is the use of functions as a bridge between community health needs and available health planning or health services research. The original studies were in India and Turkey, and have since been applied to other areas.

Five separate studies using functional analysis have been carried out in Nepal for several purposes Dept. of Int. Health, J.H.U., U.S.A., (1970).

1. To identify health problems and needs.
2. To identify staff training priorities among community health workers in terms of skill required and functional areas to be emphasized.
3. To appraise the appropriateness of existing work patterns.
4. To determine service utilization.
5. To determine service costs as well as specific activities along functional lines.

ANALYTICAL FRAMEWORK

Figure 3



PROCEDURES MADE UP OF OPERATIONS

FUNCTIONS

OBJECTIVES

NEEDS

Source:

Functions Analyzed in Unit Models and Services. Dept. of International Health, Johns Hopkins University, School of Hygiene and Public Health, 1974.

Functional analysis model is useful for several purposes: provides information on health needs, adequacy of performance, cost, and service use.

Data collection methods include: Interview - individual or group interview; questionnaires - open-ended and close-ended; daily diary; work participation technical conference of experts and direct observations using work-sampling and task checklist.

#### 4.6 Methods Of Observation

1. Work sampling (time and motion study) provides information about the actual functions and activities of workers. Taylor (1935) pioneered the development of this observation method. Two techniques are involved: (1) Instantaneous intermittent; and (2) Continuous observation which a British statistician, Tippett (1935), compared with instantaneous intermittent technique in a study among workers and found no significant difference.

Work sampling deals with quantitative measures giving details of health time dimension of health worker's activities not available from any other source. If carefully planned, using relevant

procedures applicable to the health needs of the community where it is used, it has been established that useful information would be generated (Taylor et al, 1976).

Description of the two main techniques used for making observations of activities of health workers;

a. Instantaneous Intermittent Technique

This consists of using trained observers to follow a health worker or multiple workers throughout the period of observations. The observer records on a continuous basis time utilized by the observed health worker(s) in performing tasks determined in the work sampling format.

Observations are monitored and recorded at specific intervals throughout the working period. Information generated over a long period builds up a sample that provides a realistic estimate of what is actually happening. The advantages of the technique include ease of analysis and precision in identifying the activities observed (Abdellah and Levine, 1954).

b. Continuous Observation Technique

The procedure of observation is for trained observers to follow health worker(s) during the period of performing a predetermined task to assess



the quality of the task performed. The task is then checked as either done or not done or it can be descriptive in nature.

The advantage of the continuous observation technique is that it permits the observer to assess the entire scope of task performance of the person(s) being observed. It also provides duration and specifications of tasks which intermittent observation could not provide (Wright, et al., 1977). Potterson and Bergeron (1978) compared two cadres with different educational and professional backgrounds in the U.S.A. using continuous observation and instantaneous intermittent techniques. Their findings show no significant difference in task allocation.

2. Task Observation - Checklist Inventory deals with measurement of quality of health workers(s) performance over a period of time. It complements work sampling data from clinic records and patient/worker interview.

Task observations involve selectively studying the most important areas of health workers' responsibility in detail in order to assess performance. Results obtained from observations are useful for monitoring the standard or quality of the health care process as well as providing or modifying

basic and in-service training and supervision. Usually a checklist of tasks with instructional objectives to be used as criteria for objective measurement of performance are defined in advance (Bergman, 1969).

First, a meaningful framework of health functions based on health problems of the community is constructed. Tasks necessary to solve those health problems are identified. Skills, knowledge, and attitudes necessary to perform the tasks stated in behavioral terms are designed and implemented. Therefore, what the trainees would be doing are achieved learning all that is necessary (Gilbert, 1977).

Other methods include questionnaires. Bruan et al (1973) mailed questionnaires on task analysis to physician associates of Duke University to assess the use of skills and degree of independence in various practice settings in the U.S.A. They generated results which showed that those working in private practice had performed higher proportion of independent tasks than those in institutions.

Interviews are useful when combined with another method. Certain characteristics are

revealed which could be valuable about workers. Workers themselves may suggest improvements and elucidate problems which are beyond items listed in questionnaires (Martins and Brodt, 1973).

In summary, this study will use the available literature already reviewed and identified to coincide with the approach proposed in this thesis. Further discussion on the rationale for this decision will follow in the next chapter.

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## CHAPTER V

### METHODOLOGY

#### 5.1 Research Design

In order to determine what may predispose CHOs to perform more effectively it is necessary to identify factors which are associated with CHO work. This study is a cross-sectional analytical study designed to evaluate performance of CHOs in primary health care settings in Nigeria. From the review of the literature pertaining to the evaluation of non-physician training programmes and performance assessment, the investigator took an objective approach to obtaining variables based on CHOs' curriculum, job description, individual characteristics and the work settings which are found appropriate. These factors are linked to CHOs' performance. Instruments were designed to assess CHOs' activities in the clinical settings.

## 5.2 Functional Analysis Model

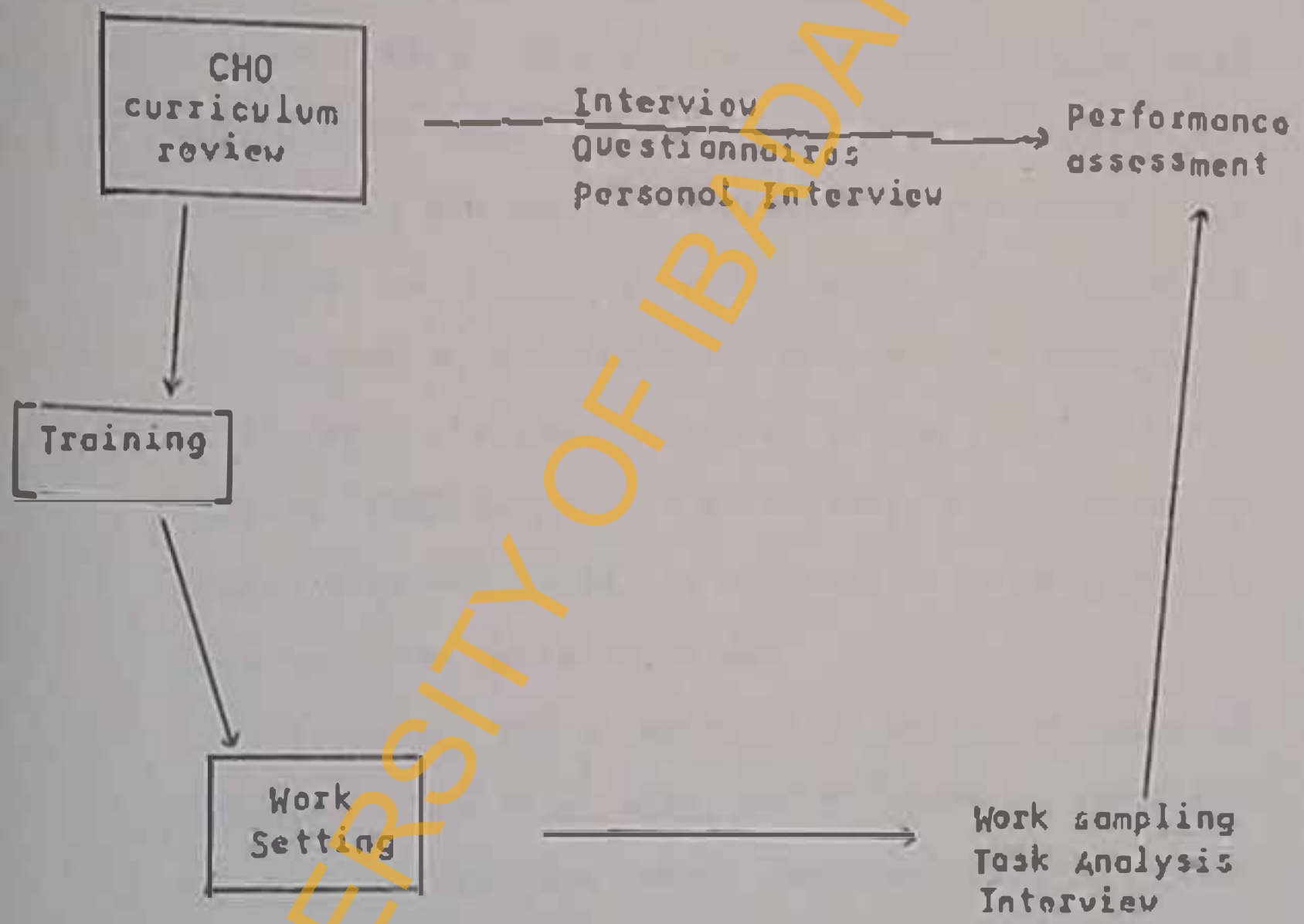
The functional analysis model described in the review of literature provides an analytical framework for this study design. Applicability of some of the components of the model for the study are as follows: Using CHOs' curriculum, tasks related to functions were categorized. These tasks match functions which CHOs perform during normal activity. Criteria were then developed to measure how well these tasks were performed as taught. It also allows for description of volume of activities performed in various categories of functions. Another useful aspect of this model is its application of data collection and technique of observations, work-sampling, and checklist inventory. Questionnaires and personal interviews serve to illustrate findings not available from any other source, e.g. institutional questionnaires. See fig. 4.

In this study, two systems of analytical model were utilized:

1. A system approach that examines the functions of CHOs and divides these functions into tasks.

FIGURE 4

Conceptual Framework Of Functional Analysis Used in This Study



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2. An observational method of looking at the CHOs performance at work settings in order to ascertain what tasks are done, how these tasks are done and how these tasks relate to required skill and knowledge (Fine, Sidney and Wiley, 1971; Golden, 1976).

In this study, service needs have been interpreted into curriculum units for which CHOs have been trained as previously discussed. The contents of these 3 units become functions which are linked with educational domain, i.e. knowledge, skill and attitude embodied in the training which enables CHOs to perform effectively and competently their expected role in delivery of primary health care to solve health problems.

However, while measures of appropriateness of acquired knowledge, skill and attitude is important to job performance other important factors beyond stated objectives of curriculum are vital and of paramount importance to ensure effective performance. Environmental condition factors such as availability of essential resources in the practice area are necessary to ensure achievement of the objectives of primary health care. Lack of,

or inadequacy of such resources create problems which might hinder performance and have adverse effects on programme objectives.

### 5.3 Operational Definition In This Study

**Task -** Is the unit of analysis:

In this study, the term "task" will refer to group of work activities designed towards the CMO instructional objectives. When it is properly carried out, the result of the task becomes an input to the accomplishment of that objective. Task will be limited to discrete measurable and observable elements.

**Performance:**

Degree to which 10 observed tasks correspond to the competence criteria specified in the instructional objectives as determined on direct observation by the investigator in this study, and rated on a 4-point Likert scale.

**Self-Perceived Competence:**

Degree to which CMO believes that she can properly perform 16 tasks in her curriculum for



primary health care determined on a 4-point scale.

#### Problems in Job Performance:

Degree to which CHO believes that the system supports her to competently relate acquired skills and knowledge to clinical settings in practice area. This will enable her perform tests and deliver health care services in the community.

This would be determined and measured by the responses, (Yes/No) given by CHOs rated on a 2-point scale. Other components of the problem collected during the field survey by personal interview would be described.

#### 5.4 Design of Instruments

1. Questionnaires
2. Observation
3. Interview

The following instruments were designed and used in this study because they are most appropriate for meeting the aims and objectives in this study.

## 1. Questionnaires

Several questionnaires were designed to generate data pertinent to identifying factors that could influence performance of CHOs in the delivery of health care. This approach was taken since original data were required, which were not available. In Nigeria, lack of reliable data is a problem in general. In this study, limited data of uncertain reliability and difficulty of obtaining data were some of the problems encountered.

Furthermore, because of geographical distribution, variability in culture, beliefs, which in turn have influence on health and utilization of health personnel, precision in various questionnaire responses returned were deemed an important factor, and definitive plan and strategies were employed to achieve this goal. Each questionnaire was accompanied by a letter from the author explaining the purpose of the study.

Similarly, questionnaires were personally taken to each state's Ministry of Health.

## Questionnaire #1 - Individual 1 (See Appendix 1)

This was designed for individual CHOs to obtain personal characteristic information; it contained 18 open- and close-ended questions. The following issues were addressed.

### 1a. Personal Characteristics

- a. Professional background prior to training.
- b. Years of experience after training.
- c. Perceived adequacy of training - several questions were asked to explore perceived acquired skills, knowledge and attitudes in each curriculum unit of the CHO programme.
- d. Grading of practical experience in each CHO curriculum unit.
- e. Need for more training in either theory or practical of the training programme.

### 1b. CHO Self-Perceived Competence

It would be useful to have a measure of CHO's perceived competence to perform specific primary health care tasks. The relation between CHO's perceived competence and actual performance could be examined by the author. Sixteen tasks were included in each CHO's

questionnaire to indicate how well each task is being performed.

2. Resource Constraints in Clinical Settings
  - a. Ability to effectively apply all skills and knowledge acquired at the training institutions in the practice area.
  - b. Availability of drugs.
  - c. Availability of vaccines.
  - d. Availability of equipment.
3. Institution Variables
  - a. Total number of hours assigned to theory throughout the programme.
  - b. Total number of hours assigned to practical throughout the programme.
  - c. Number of full-time teachers engaged in teaching CBOs throughout the programme.

These variables are fully discussed under formation of variables. Each CBO questionnaire contained identifying information including questionnaire code number, state number, type and place of work in the state.

Questionnaire #2 - Institution 2 (see Appendix 2)

This was developed to generate data from each of the nine training institutions. The information addressed:

- The objective of the training institutions.
- Date training commenced.
- Number of CHOs trained each year and their state of origin.
- Number of teaching personnel both full-time and part-time throughout each training session.
- Proportion of total number of hours assigned to theory and practical experience throughout each session.
- Statement about achievement of the training programme whether fully achieved or partly achieved or not achieved and to state reason, if partly achieved, or not achieved.

Each institution contained an identifying information code number and state number.

Questionnaire #3 - Faculty Questionnaire (See Appendix 3)

This questionnaire was developed for individual faculty or any personnel who participated in the training of CHOs during the training programme in each training institution. Questionnaires were to provide information on the methods of teaching, personal characteristics such as:

- Professional background.
- Their status, whether full-time or part-time.
- Years they have been teaching.
- The subject(s) taught.
- Number of hours taught in each course throughout the training.
- The methods used for teaching each course.
- Statement of achievement of the objective of teaching the course and the reason for partial or non-achievement.

Each questionnaire contained identifying information code number.

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\*Personnel involved in the teaching of CHOs

Questionnaire #4 - Policy Questionnaire (See Appendix 4)

This was developed for Chief Health Officers in each State Ministry of Health. They are responsible for policy issues such as selection and recommendation of CHOs for training, and the deploying of CHOs after training. However, during the field study, it was discovered that the duty of deployment of CHOs after training in some states belonged to the State Health Management Board. This did not in any way have adverse effects on the study.

Information addressed by the questionnaire included:

- Pattern and area of utilization of CHOs in the state.
- The Chief Health Officer's perceived effectiveness of CHOs in the State.
- Incentives available for CHOs in the state.
- Areas where CHOs are perceived to be most useful, e.g. health promotion, prevention, curative, rehabilitation.

Each questionnaire contained an identifying information code number. All Chief Health Officers

except one were personally interviewed. The only one not interviewed or seen was as a result of unexpected riots at the time of the study which occurred in that state (Maitasine riot in Gongola State).

Item #5 -Task Analysis - Competency Rating Form  
(See Appendix 5)

In the format of this instrument the 10 tasks were listed separately. Each task has sub-tasks. Criteria for measurement are given full explanation - these are implicit wordings of CEO instructional objectives. The form contained all identifying information code, the CEO code, number, date and state.

Each observation task contained identifying code and all criteria for measuring performance also contained code number forease of analysis.

The author herself observed all the samples of CEOs in the 10 randomly selected states, using continuous observation technique. The author was consistent with the use of the inventory and criteria to measure CEOs performance throughout the field survey. In no way were any of the CEOs influenced by intervening in his or her



activities. The author was also careful and unobtrusive as much as possible in all the health centers where CHOs performance occurred. Furthermore, the author did not have any bias or preconceived notions about all the CHOs variables under investigation.

Item 6 - Work Sampling Form (Time and Motion Study)  
(See Appendix 6)

Intermittent instantaneous 2 minute interval forms were developed. The format used was a modification of the one used at the Institute of Child Health, Somolu Clinic, Lagos between 1970 and 77, it followed closely the format used in Nepal by the Department of International Health, School of Hygiene and Public Health, The Johns Hopkins University, U.S.A.

The form was designed to record all CHO activities observed by trained observers at a fixed interval of every 2 minutes. The first part of the form contained basic identifying information including questionnaire number, type of health care

facility and total number of observation hours for the day.

The second section showed activity counts by time of day, classified by place, contact, functions and description of activities.

- Place: Refers to clinic, home, community, away, or other places
- Contact: Person CHO in contact with, i.e. 0-5 years, 6-14 women, men or alone. The investigator in this section did not use the term "well child or ill child" because of its ambiguity to observers. An Observer might not be able to distinguish when a child is ill or well. However, regarding the probable problem of observers being able to distinguish between the age range of children between 4 - 6 years, observers picked this up while CHOs were counselling the Mothers and when in doubt they asked CHOs after consultation. This had been previously discussed during the pre-test.
- Functions: This section was divided into 3 cells in order to divide functions into sections (a) clinical (b) administrative and (c) education and community functions. Under clinical functions, all preventive and curative activities were recorded i.e. immunization HCK/FP, health education, injection, nutrition, antenatal and postnatal. Under community functions - group health education or home visit. Under administrative functions of

activities like logistics, personnel support, supervision were recorded.

- Activity: Under activity were interview examination, advice and treatment, record, demonstration, preparation, waiting, transit, personal, none.
- A cell was provided in which the observer was to comment and explain a particular activity.

#### 5.5 Formation And Measures of Dependent and Independent Variables

##### Operational Sequence 1

Several steps were employed in the formation of variables used to measure CHOs' performance.

##### Step I - CHOs Observed Performance Competency Rating

CHO curriculum served as a major reference (see Appendix 7).

After the review of CHO curriculum, 10 tasks that have been identified to relate to health problems in the community which are frequently performed at health facility settings were selected

to measure performance. Those tasks were written into statements consisting of small units of work activities. Each activity was also defined in behavioral and measurable terms. Criteria for assessing CHO's performance were implicit wordings of the instructional objectives of the CHO curriculum.

Each task has sub-tasks rated on a 4-point scale as: Very well = 3; Well = 2; Poorly = 1; and Not at All = 0. Each task score is an average of the sub-tasks scores, to allow for some sub-tasks which CHO's did not have opportunity to perform either in part or whole on any given day. For each task the individual scores of CHO's were pooled and the mean score calculated and used for purposes of analysis.

## Step II

To facilitate presentation, the tasks were regrouped to correspond with each unit of CHO curriculum.

### Step III CBO Self-Perceived Competence

It is important to determine the rate of success of acquired skills, knowledge and attitudes as stated by trainee related to job performance. This measure is different from the orthodox method of assessment without taking environmental condition into consideration.

In order to understand CBOs self-perceived competence as indicated by themselves, 16 tasks related to their role and which they have been taught were selected from their curriculum. CBOs were to indicate how well they could perform each task. The scale of this self-rating was: Very well = 3; well = 2; poor = 1; and Not at all = 0.

The self-rating competence was used to generate composite data similar to CBOs observed performance described above. It is a subjective rating. This was done through the use of printed questionnaires to all CBOs in the Federation.

### Step IV - Problems Encountered in Job Performance

This measure was adopted to ascertain appropriateness of training to service needs taking

environmental conditions into consideration. in the practice area. Problems identified by CHOs would be important information which should be of interest to policy makers. The seriousness of problems as indicated by CHOs should serve as an indicator which, if necessary actions are undertaken, would avert situations which could otherwise hinder future CHOs performance of CHOs in the delivery of primary health care in the community.

Furthermore, this would serve the purpose of relating learned skills, knowledge and attitude with practice, which will have implications to the training curriculum.

In order to identify and highlight the magnitude of their problems, "problems that CHOs encountered in Job Performance" had been treated as a dependent variable for analysis with all independent variables of interest. All CHO responses to the question "Do you have problems in the course of job performance?" with Yes, No responses were added resulting in a score on a scale between 0 and 1. Grouped as 0 = no problem; 1 = yes problems. This also was done through the use of

printed questionnaires, to all the CHOs later confirmed by the investigator during the field study.

Furthermore, a list of 6 problems relating to the system of CHOs environment were given and CHOs were to indicate the magnitude of each. Responses from CHOs as to the extent of problems they encountered in job performance yes/no, were later described. The term problem in job performance in this study was supposed to address any problem listed in the questionnaire which CHOs perceived to impede effective performance. The aim was to examine the relationship between training and actual performance at clinical settings. The extent of problems may vary, therefore the interpretation would depend on the responses given by CHOs according to their own understanding and perception. Findings of CHOs would partly be descriptive so that what was perceived as problems by CHOs beyond those listed on the questionnaire but obtained by personal interview would be presented.

## Operational Sequence 2 - Formation of Independent Variables

In order to identify factors which are associated with CHOs performance at work settings, several questionnaires, were designed to generate data which documented background characteristics and development of work-influencing attitudes among CHOs, analyzed as predisposing and enabling variables.

### 1. Personal Characteristics

a. Professional background - Prior to training, CHOs have varied professional backgrounds. The influence on CHOs performance is not known. This study groups them in 3 categories.

#### 1. Public Health Nurse (PHN)

is a registered nurse and a midwife with an additional one year of post-graduate training in public health. She functions mainly in health facility settings, e.g. health centers providing curative and preventive services to the community.



ii. Registered Nurses and Midwives

a. Nursing Sister or Superintendent is a male or female nurse respectively, who is a hospital based health personnel, and possesses additional qualifications in a field of nursing e.g. psychiatry.

b. Community Midwifery Sister/Superintendent Is a registered health professional with midwifery training with or without general nursing background. Works mainly in health centers as community personnel. In this study these groups described above would be referred to in general as "other" professionals as distinct from PHN and Higher Rural Superintendent.

iii. Higher Rural Superintendent

Is a man with special training to deliver health care in the community including environmental health sanitation and epidemiology. He works in the

community clinic after training. He has had no nursing or midwifery training background. The length of training is 3 years.

The health professionals described above need additional and expanded training in the special areas necessary for the provision of primary health care. The new training provides them with skills, knowledge, and attitudes to enable them to perform PHC functions in the community with community participation. They acquire skills in history taking, performing physical examinations to diagnose health problems and give appropriate treatment and advice using standing orders. They also have training in management and organization techniques to enable them to man health centers, in all the States.

2. Years of Experience - CBOs have been practicing for over 3 years, the relationship between performance and years of experience need to be explored. In this study, years of experience has been grouped into three categories: <1 year; 1 to 2 years; greater than 2 years

3. Perceived adequacy of training programme in each unit of the curriculum related to practice area need to be examined in order to know the relationship between appropriateness of training and practice.

In order to explore CHOs perceptions of training, several questions were asked in order to know their feelings about their educational preparation, i.e. what they have been taught related to what they could do in actual work settings. CHOs were asked to indicate how adequately the training has prepared them for their new role. CHOs were asked to rate adequacy of training in each unit and overall classified into 4 classes, i.e. Very good = 3; Good = 2; Adequate = 1; Poorly = 0.

4. Grading of Practical Experience - This is an important factor and needs to be explored since three quarters of CHO preparation was composed of practical training. The impact of this should be known and related to performance. They were asked to grade each unit of the curriculum both in theory and practical experience. The responses were classified into

- 4 categories similar to Perceived adequacy-of training rated on a scale of 0-3.
5. Need for more experience in each unit of the curriculum. This factor explores areas of deficiencies indicated by CHOs which will act as a feedback for curriculum modification. Responses to the question regarding "Need for more training in each unit" were also classified into 4 categories and rated on a scale of 0-3.
6. Being able to apply all skills and knowledge acquired at training institutions effectively in the practice area needs empirical study in order to identify problem areas confronted by CHOs in the clinical settings. Responses to the question "Are you able to utilize all skills and knowledge acquired in the training programme effectively in the practice area?" (Yes/No) were classified and analyzed as categorical data. These were measured on a scale of 0 and 1. CHOs responses would indicate whether the reason for not being able to utilize all acquired skills and knowledge was due to need for extra training; lack of resources, such as drugs, equipment and personnel; inappropriate use of CHOs knowledge, due to misconception of role by the authority,

or lack of motivation and incentive.

### 3. Institutional Variables

Baseline information not available anywhere else about the training institutions are a vital part of this study. Identification of the relationship between performance of CHOs after training serves as a link between institutions and CHOs productivity in the service area. Assessment of the training programme is the process of determining the extent to which the skills, knowledge and attitude provided to trainees by the institutions are effective, and the extent to which they make significant contributions to meeting health care needs in the community. Ideally, this assessment should involve responses of teachers and others involved in the learning process. However, as important as training institution variables are to determine effectiveness of completeness of training programmes, indicators are difficult to measure. In this study the following variables are what were available to quantify the effectiveness of institutions in relation to CHOs performance. They may or may not measure

the desired objectives due to inadequate data from institutions. Nevertheless, these variables are vital, and we should know how they relate to CHOs performance.

- a. Total number of hours assigned to theory throughout the programme.
  - b. Total number of hours assigned to practical experience throughout the programme.
  - c. Number of full-time teachers engaged in teaching CHOs throughout the programme.
4. Environmental Constraints
- a. Availability of drugs.
  - b. Availability of vaccine.
  - c. Availability of equipment.

Health facility settings where CHOs are performing health duties are major factors in determining or predicting the success or failure of achievement of objectives of primary health care. Availability of drugs, vaccine and equipment are essential to the success of good performance because they reinforced the confidence of both CHOs and patients. The ultimate goal of patients is to receive adequate treatment which includes provision of drugs, vaccines, and referral systems. Availability of essential equipment which aids

early diagnoses, early detection of diseases and prompt treatment.

In order to achieve this objective many strategies were designed, major ones being rural accessibility and personnel to perform effectively given necessary resources. In this study, a list of five essential drugs necessary to cure communicable diseases, and five essential vaccines for prevention of deadly diseases were included in the CHO questionnaires for each to indicate duration of availability from 1 month to 12 months. Availability of these items as indicated by CHOs were regrouped and classified as less than 6 months, 6 months and above for drugs and vaccines. Similarly, list of essential equipment necessary to perform primary health functions at health centers were included in CHOs questionnaire for each CHO to indicate availability and accessibility. Availability of equipment (Yes/No) responses were added and regrouped and classified as "present and in order"; "present not in order" or "not present".

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## 5.6 Discussion Of problems Inherent In Instruments Development And Validation Of Instruments Used In This Study

Questionnaires are an effective method of job analysis, as the instrument can gather information on many workers in a short time. However, problems inherent in the use of questionnaires are that of reliability of the data (Nelson et al., 1975).

Amongst the other problems associated with the use of questionnaires are low rate of return, especially in many developing countries which have poor postal services and inefficient communication systems. Apart from this, many workers may not understand the items on the questionnaires. Questionnaires with close-ended questions obtain data with more reliability than the open-ended type. However, both are still prone to errors (Backstrum and Hursch, 1969). In this study, a pre-test was carried out prior to field survey and responses from CHOs showed there was no serious misconception.

Modification of questions not clearly understood was carried out. Also questionnaires were personally taken to each state in most cases,

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Modification of questions not clearly understood was carried out. Also questionnaires were personally taken to each state in most cases, while courier postal services were used for some

others. Further strategies would be discussed under "Field Survey Plan."

### Observation Method

Observation method is generally quite reliable and valid when well trained observers are used, though it has limitations. Data are usually obtained on a smaller number of workers than in other methods. Results are generally more detailed and more frequently accurate than self-perception. Other problems inherent in the observation method are as follows:

1. It is relatively expensive.
2. It is energy consuming and tedious.
3. It is time consuming.

In summary, observation method has enormous logistic constraints, although it has consistency.

In this study two observation techniques, i.e. continuous observation and instantaneous intermittent techniques have been used to provide data not available through questionnaire. They are reliable and accurate methods. Data generated are detailed. The method however, is subject to a effect of being observed known as "Hawthorne effect"; good rapport and proportion

before study minimizes this effect. Golden (1976) stated that if well trained observers are unobstrusive in the health care setting, health care workers do not change their function significantly while being observed.

Webb et al. (1971) stated that visible observers can produce changes in worker's behavior that can affect validity of comparison.

Deutsch (1949) suggests that the way to control for this effect is to permit the effect contaminant to wear off before collecting data for analysis. Other important suggestion by this author includes reassuring the workers sufficiently enough for them to trust the investigator.

Another problem described is the human observer error. This will be variable over the course of his/her observations. She may become too involved or biased as she observes or may become bored. Either of these could produce spurious differences in comparison. However, while it is believed that good rapport with CHOs could help to minimize abnormal performance during observation which is a limitation of this type of research, the author empirically conducted a study on a small sample of CHOs to validate Task Analysis Instruments used.

### 5.7 Development And Validation Of Task Analysis (Checklist Instrument For Evaluation Of CHO Performance)

The Development of CHOs' training programme throughout the nation calls for development of instruments methods of its validation, which can assess changes in the performance of CHOs' skills, knowledge and attitudes. This exercise would enable comparisons among training institutions. This could then be replicated to other health workers yet to be evaluated. Towards this end, the method employed to evaluate CHOs' performance went through validation procedures before the field survey.

This research employs the use of several scales. The two major aspects of measurement are reliability and validity (Nunnally, 1968).

Definitions of reliability are given in the measurement literature. Basic to these discussions is the requirement that errors of measurement be kept to a minimum in measuring a concept. Definitions of reliability emphasize that the measure should be dependable and consistent (Kerlinger, 1973; Nunnally, 1978).

Towards this end, the author carried out validation procedures after developing the checklist

of tasks in CHOB curriculum.

The 10 tasks from CHOB curriculum, which were frequently performed in the field were selected for this survey to assess performance of CHOBs. A sample of 6 CHOBs at Somolu Clinic in Lagos were observed and rated incognito. For this purpose, efforts were made to ensure that CHOBs were not aware they were being rated even though they were aware of the author's presence around the clinic.

Table 13 presents the details of the 10 tasks used by the author to assess CHOB performance. After this exercise, another well experienced Senior Research Fellow and a member of staff of the Institute of Child Health and Primary Health Care, College of Medicine, Lagos were invited to participate in the instrument validation exercise. He had previously assisted the author on many occasions during field practice and was fully conversant with the instruments. However, after further deliberation about the final validation exercise, with pencil and Task Analysis inventory form he observed the same sample of 6 CHOBs "incognito" at the same clinic in Lagos. Later, the 2 results were compared for inter-rater

agreement.

Finally, the author and the research fellow paired up about a week later to observe the same sample of 6 CHOs at the same clinic to rate their performance at the same time under non-concealment procedure one after the other.

These data were analysed to test degree of agreement between the scores of the two observers. For this purpose, differences in scores were treated as continuous variables. A paired t-test procedure was used to evaluate differences in scoring by the 2 raters.

In Tables 14 and 15, a paired t-test was done to compare the average score assigned to a CHO's performance by 2 independent assessors when the CHO did not know that she was being tested. The result shows good agreement between two raters except in task nos. 2 and 3 respectively.

Tables 16 and 17 show no systematic difference when CHOs were observed incognito and under non-concealment for either observer. The correlation analysis of scores was 0.736. From this it could be suggested that the method of data collection to measure CHOs' performance is reliable and valid. A wider sampling of CHOs in various geographic states for this validity check was not possible because of enormous logistic problems.

Table 13 List of Tasks selected to Evaluate  
CHO Performance

Task No.	Title	Number of Items In Each Observation	Maximum Score In Each
1.	History Taking	17	51
2.	Physical Examination	37	108
3.	Assessment of Nutritional Status	7	21
4.	Conduct Health Education	4	12
5.	Haemoglobin Estimation	5	15
6.	Maintenance of Birth and Death Register	5	15
7.	Control of Communicable Diseases	4	12
8.	Care of Handicapped Persons	4	12
9.	Job Description for BHSS	8	24
10.	Manage and Maintain Drug Supply	10	30



Table 14. Comparison Of Sample Of CHOs In Lagos By 2 Observers Prior To Field Survey Incognito Condition

Tasks	Obs.	CHO1	CHO2	CHO3	CHO4	CHO5	CHO6	Paired t-Statistic	Prob.
History Taking	X1	2.6	2.8	2.6	2.8	2.6	2.4	0.307	0.50
	X2	2.8	2.6	2.6	2.8	2.5	2.4		
Physical Exam	X1	2.0	1.8	1.9	2.0	2.2	1.8	1.113	0.4
	X2	1.8	2.0	1.9	2.2	2.5	1.8		
Assessment of Nutritional Status	X1	2.6	2.4	2.6	2.8	2.8	2.6	2.907	0.025
	X2	2.8	2.6	2.7	2.8	3.0	2.6		
Conduct Health Education	X1	3.0	3.0	3.0	3.0	3.0	3.0	0.00	
	X2	3.0	3.0	3.0	3.0	3.0	3.0		
Haemoglobin Estimation	X1	2.8	3.0	2.9	2.6	3.0	2.8	0.948	0.4
	X2	2.8	2.9	2.8	3.0	2.6	2.2		
Maintain Register of Births and Deaths	X1	1.8	1.9	2.0	1.8	1.8	2.0	0.00	1.0
	X2	1.8	1.6	1.8	2.0	2.0	2.1		
Notify Specified Diseases to the Appropriate Authority	X1	1.6	1.8	1.6	2.0	1.8	1.8	0.00	1.0
	X2	2.0	1.9	1.9	1.8	1.8	1.2		

Table 14 (Cont'd)

Tasks	Obs.	CB01	CB02	CB03	CB04	CB05	CB06	Paired t-Statistic	Prob.
Keep Register of Handicapped Persons in the Area	X1	1.6	1.6	1.5	2.0	1.8	1.6	0.299	0.50
	X2	1.9	1.6	1.5	1.8	1.5	2.0		
Care for Lower Cadres	X1	2.8	2.9	3.0	3.0	2.8	3.0	0.00	
	X2	2.8	3.0	2.9	3.0	2.8	3.0		
Maintain Drugs (Logistics)	X1	2.9	3.0	3.0	2.8	2.8	3.0	0.307	0.50
	X2	3.0	2.8	3.0	2.8	3.0	3.0		

X1 = Rater No. 1

X2 = Rater No. 2

Table 14 (Cont'd)

Tasks	Obs.	CHO1	CHO2	CHO3	CHO4	CHO5	CHO6	Paired t-Statistic	Prob.
Keep Register of Handicapped Persons in the Area	X1	1.6	1.6	1.5	2.0	1.8	1.6	0.299	0.50
	X2	1.9	1.6	1.5	1.8	1.5	2.0		
Care for Lower Cadres	X1	2.8	2.9	3.0	3.0	2.8	3.0	0.00	
	X2	2.8	3.0	2.9	3.0	2.8	3.0		
Maintain Drugs (Logistics)	X1	2.9	3.0	3.0	2.8	2.8	3.0	0.307	0.50
	X2	3.0	2.8	3.0	2.8	3.0	3.0		

X1 = Rater No. 1

X2 = Rater No. 2

Table 15. Comparison Of "Paired" Result Of Observation Of Sample Of CHOs In Lagos Under "Non-Concealment" Condition

Tasks	Obs.	CHO1	CHO2	CHO3	CHO4	CHO5	CHO6	Paired t-Statistic	Frob.
History Taking	X1	2.4	2.7	2.5	2.2	2.8	2.2	0.598	0.50
	X2	2.2	2.8	2.6	2.2	2.6	2.2		
Physical Exam	X1	1.9	2.4	1.8	1.9	2.0	1.6	-3.796	0.025
	X2	2.0	2.5	1.9	1.9	2.2	1.8		
Assessment of Nutritional Status	X1	2.5	2.6	2.8	3.0	3.0	2.5	-0.466	0.50
	X2	2.6	2.6	2.9	2.9	2.8	2.8		
Conduct Health Education	X1	3.0	3.0	3.0	3.0	3.0	3.0	0.00	
	X2	3.0	3.0	3.0	3.0	3.0	3.0		
Haemoglobin Estimation	X1	2.8	2.9	2.9	3.0	2.8	3.0	1.536	0.1
	X2	2.6	2.7	3.0	3.0	2.6	3.0		
Maintain Register of Births and Deaths	X1	1.6	1.7	1.4	1.2	1.8	1.8	0.337	0.50
	X2	1.2	1.8	1.6	1.4	2.0	1.7		
Notify Specified Diseases to the Appropriate Authority	X1	2.8	1.8	1.9	2.1	1.6	2.0	0.598	0.50
	X2	2.8	1.6	2.0	2.2	1.8	2.0		

Table 15. Comparison Of "Paired" Result Of Observation Of Sample Of CBOs In Lagos Under "Non-Concealment" Condition

Tasks	Obs.	CHO1	CHO2	CHO3	CHO4	CHO5	CHO6	Paired t-Statistic	Prob.
History Taking	X1	2.4	2.7	2.5	2.2	2.8	2.2	0.598	0.50
	X2	2.2	2.8	2.6	2.2	2.6	2.2		
Physical Exam	X1	1.9	2.4	1.8	1.9	2.0	1.6	-3.796	0.025
	X2	2.0	2.5	1.9	1.9	2.2	1.8		
Assessment of Nutritional Status	X1	2.5	2.6	2.8	3.0	3.0	2.5	-0.466	0.50
	X2	2.6	2.6	2.9	2.9	2.8	2.8		
Conduct Health Education	X1	3.0	3.0	3.0	3.0	3.0	3.0	0.00	
	X2	3.0	3.0	3.0	3.0	3.0	3.0		
Haemoglobin Estimation	X1	2.8	2.9	2.9	3.0	2.8	3.0	1.536	0.1
	X2	2.6	2.7	3.0	3.0	2.6	3.0		
Maintain Register of Births and Deaths	X1	1.6	1.7	1.4	1.2	1.8	1.8	0.337	0.50
	X2	1.2	1.8	1.6	1.4	2.0	1.7		
Notify Specified Diseases to the Appropriate Authority	X1	2.8	1.8	1.9	2.1	1.6	2.0	0.598	0.50
	X2	2.8	1.6	2.0	2.2	1.8	2.0		

Table 15 (Cont'd)

Tasks	Obs.	CHO1	CHO2	CHO3	CHO4	CHO5	CHO6	Paired t-Statistic	Prob.
Keep Register of Handicapped Persons in the Area	X1	1.6	1.6	1.5	1.7	1.6	1.8	1.168	0.47
	X2	1.4	1.5	1.6	1.6	1.6	1.8		
Care for Lower Cadres	X1	3.0	2.9	3.0	2.8	2.8	3.0	1.464	
	X2	3.0	2.9	3.0	2.6	2.8	3.0		
Maintain Drugs (Logistics)	X1	3.0	2.9	3.0	2.8	2.8	3.0	1.464	0.4
	X2	3.0	2.9	3.0	2.6	2.8	3.0		

Two raters under a non-Concealment Observation

Table 16. Comparison Of The Same Rater Under Non-Concealment And Incognito Conditions

Observer No. 1

Tasks	Study	CHO1	CHO2	CHO3	CHO4	CHO5	CHO6
History Taking	Z1	2.4	2.7	2.5	2.2	2.8	2.2
	Z2	2.6	2.8	2.6	2.8	2.6	2.4
Physical Examination	Z1	1.9	2.4	1.8	1.9	2.0	1.6
	Z2	2.0	1.8	1.9	2.0	2.2	1.8
Assess Nutritional Problems	Z1	2.5	2.6	2.8	3.0	3.0	2.5
	Z2	2.6	2.4	2.6	2.8	2.8	2.6
Conduct ANC	Z1	3.0	3.0	3.0	3.0	3.0	3.0
	Z2	3.0	3.0	3.0	3.0	3.0	3.0
Estimate Haemoglobin	Z1	2.8	2.9	2.9	3.0	2.8	3.0
	Z2	2.8	3.0	2.9	2.6	3.0	2.8
Maintain Register of Births and Deaths	Z1	1.6	1.7	1.4	1.2	1.8	1.8
	Z2	1.8	1.9	2.0	1.8	1.8	2.0
Notify Specified Diseases to the Appropriate Authority	Z1	2.8	1.8	1.9	2.1	1.6	2.0
	Z2	1.6	1.0	1.6	2.0	1.8	1.8
Keep Register of Handicapped Persons	Z1	1.6	1.6	1.5	1.7	1.6	1.8
	Z2	1.6	1.6	1.5	2.0	1.8	1.6
Care for Lower Cadres	Z1	3.0	2.9	3.0	2.8	2.8	3.0
	Z2	2.8	2.9	3.0	3.0	2.8	3.0
Maintain drugs (logistics)	Z1	3.0	3.0	2.9	3.0	3.0	2.8
	Z2	2.9	3.0	3.0	2.8	2.8	3.0
Paired t		0.36	0.04	0.13	0.35	0.08	0.12
P Value		0.73	0.97	0.89	0.73	0.94	0.91

Z1 = Non - concealment  
Z2 = Incognito

Table 17. Comparison Of The Same Rater Under Non-Concealment And Incognito Conditions

Observer No. 2

Tasks	Study	CHO1	CHO2	CHO3	CHO4	CHO5	CHO6
History Taking	Z1	2.2	2.8	2.6	2.2	2.6	2.2
	Z2	2.8	2.6	2.6	2.8	2.5	2.4
Physical Examination	Z1	2.0	2.5	1.9	1.9	2.2	1.8
	Z2	1.8	2.0	1.9	2.2	2.5	1.8
Assess Nutritional Problems	Z1	2.6	2.6	2.9	2.9	2.8	2.8
	Z2	2.8	2.6	2.7	2.8	3.0	2.6
Conduct ANC	Z1	3.0	3.0	3.0	3.0	3.0	3.0
	Z2	3.0	3.0	3.0	3.0	3.0	3.0
Estimate Haemoglobin	Z1	2.6	2.7	3.0	3.0	2.6	3.0
	Z2	2.8	2.9	2.8	3.0	2.6	2.2
Maintain Register of Births and Deaths	Z1	1.2	1.8	1.6	1.4	2.0	1.7
	Z2	1.8	1.6	1.8	2.0	2.0	2.1
Notify Specified Diseases to the Appropriate Authority	Z1	2.8	1.6	2.0	2.2	1.8	2.0
	Z2	2.0	1.9	1.9	1.8	1.8	1.2
Keep Register of Handicapped Persons	Z1	1.4	1.5	1.6	1.6	1.6	1.8
	Z2	1.9	1.6	1.5	1.8	1.5	2.0
Care for Lower Cadres	Z1	3.0	2.9	3.0	2.6	2.8	3.0
	Z2	2.8	3.0	2.9	3.0	2.8	3.0
Maintain drugs (Logistics)	Z1	3.0	3.0	2.8	2.0	3.0	2.8
	Z2	3.0	2.8	3.0	2.8	3.0	3.0
Paired t		0.34	0.19	0.11	0.65	0.00	0.31
P Value		0.74	0.85	0.91	0.52	0.01	0.76

Z1 = Non - concealment  
Z2 = Incognito



The impetus for the design of the method by the author and the primary purpose of interest for testing the validity of this instrument is to demonstrate validity and reliability of the instruments employed in this study. Another reason was to generate baseline data for future study of CHOs. Furthermore, the intent of the demonstration is to test the feasibility of collecting performance evaluation information through work sampling.

Final development of these instruments were reviewed by members of staff of the Institute of Child Health and Primary Care, College of Medicine, Lagos; faculty members of the Department of International Health, The Johns Hopkins University, School of Hygiene and Public Health, U.S.A. and my supervisor at the Department of Preventive and Social Medicine, University of Ibadan.

## 5.8 Sampling Design

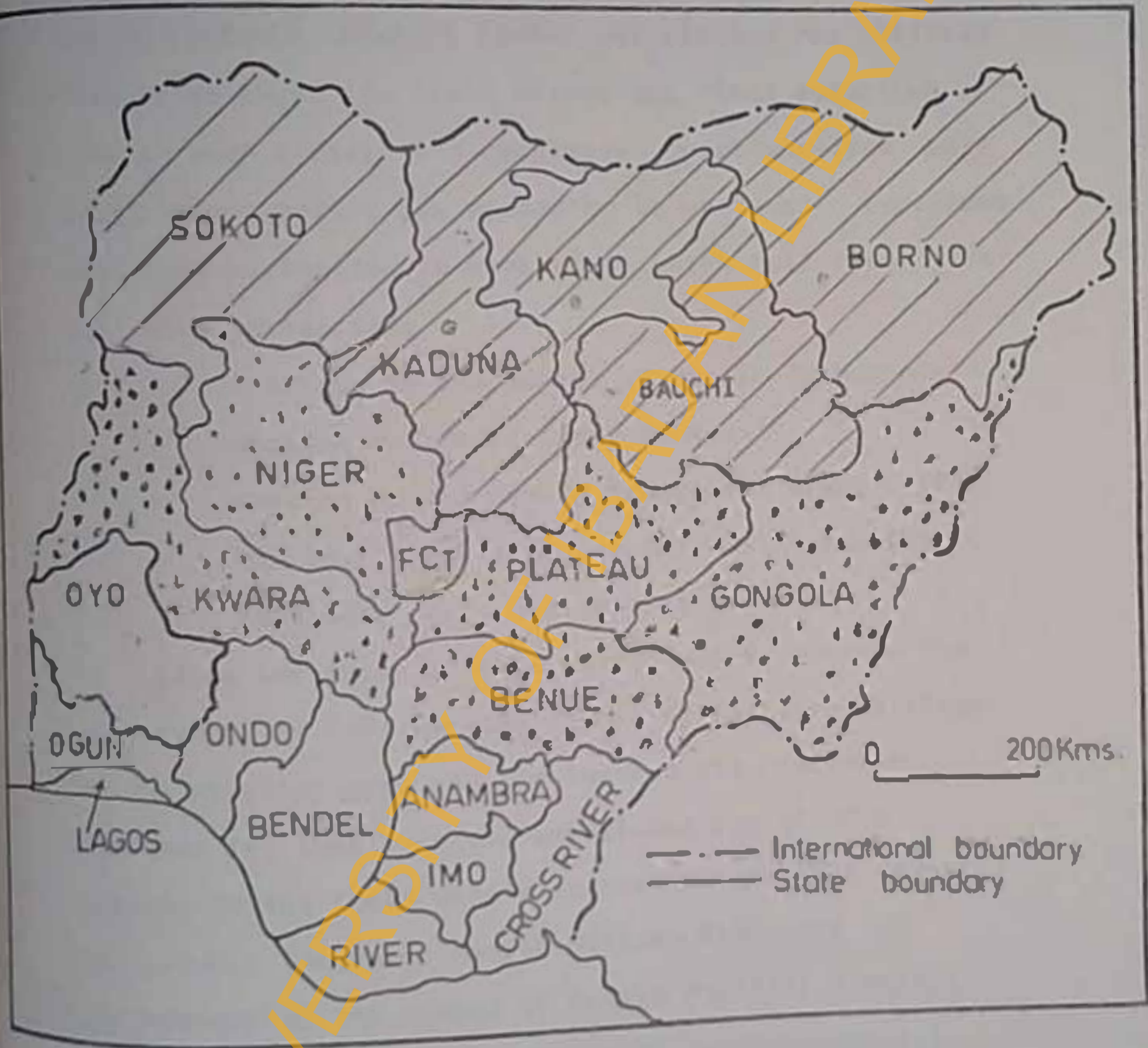
The study was conducted in Nigeria using a 3 stage sampling procedure technique to obtain sample of CHOs for field observation. Nigeria consists of 19 states. Community Health Officers are scattered all over the rural areas in the states. The states are not homogeneous in terms of health status, health facilities and utilization of health personnel. These factors needed careful consideration for a sampling design. (See figure 5).

### Procedure For Sampling Design

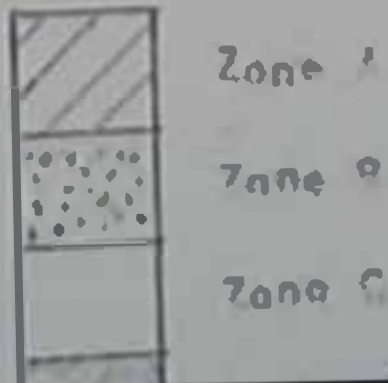
1. Initial stratification of states into 3 zones.
2. Selection of states in each zone and listing all local governments with a Primary Health Care facility in each state.
3. Selection of a sample of such local governments from each state.
4. Selection of 100% of CHOs in each selected local government area of each state.

# MAP Of Nigeria Showing Stratification Of States Into Three Zones In This Study

Figure 5

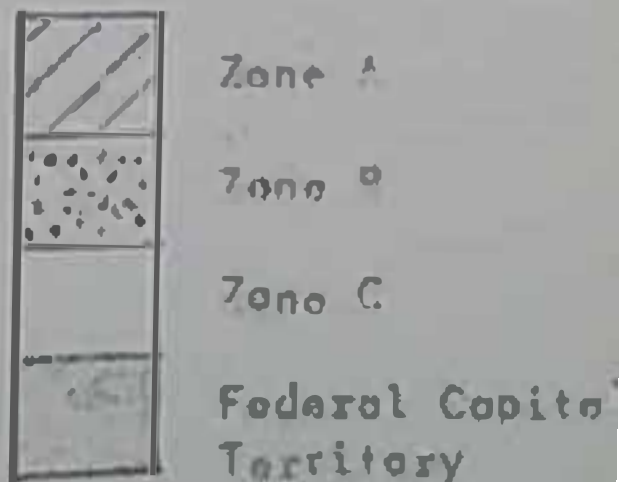
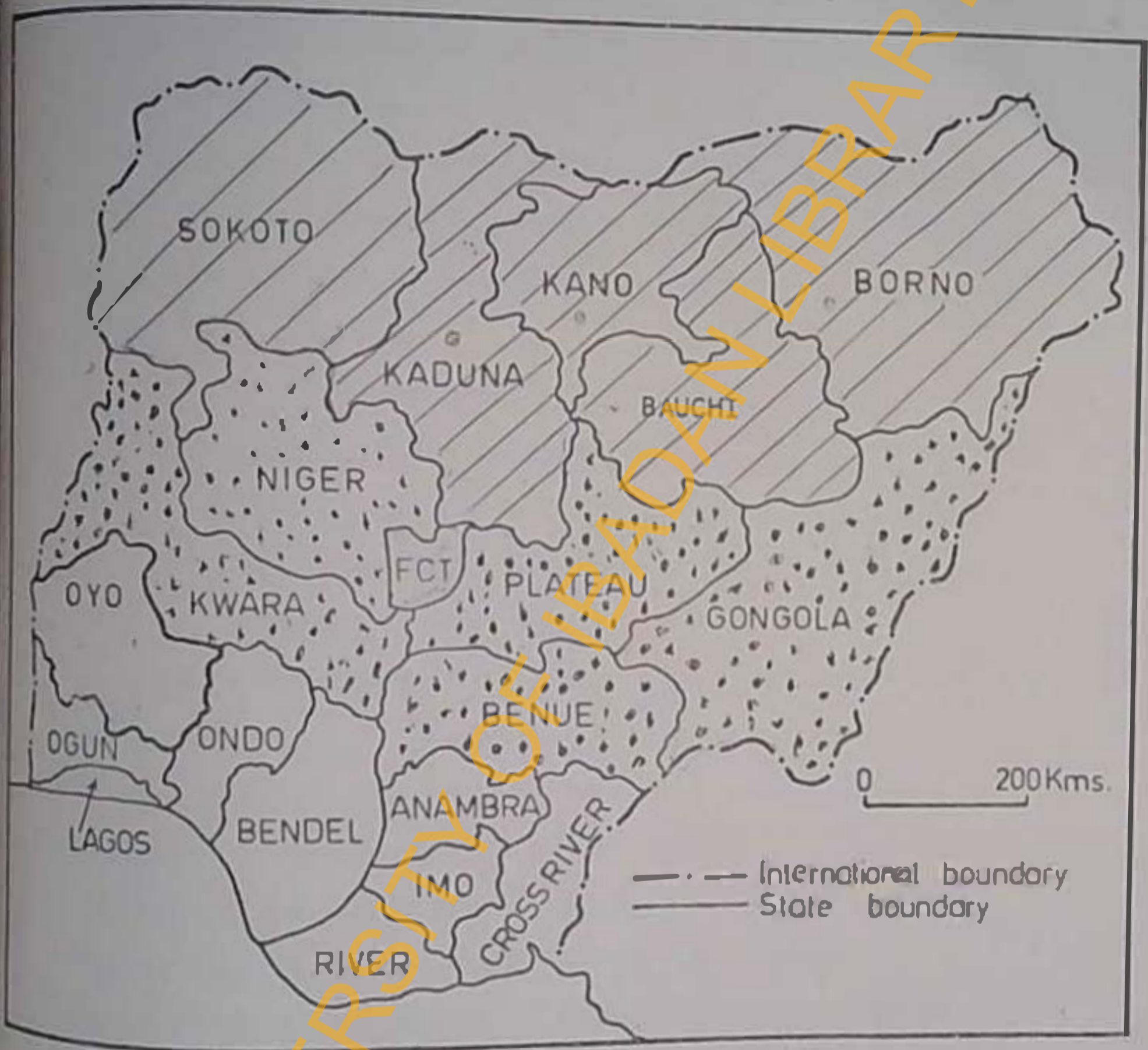


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Map of Nigeria showing Stratification of States  
 Into Three Zones In This Study

Figure 5



Before the survey, each Chief Health Officer of the 10 randomly selected states was visited for official discussion about the field survey and final selection of CHOs in each state. The completed questionnaires were obtained and sorted out according to whatever functions CHOs were performing in each state which fell into the following categories:

- Teaching in the School of Health Technology
- Working at the Ministry of Health
- Working at the Health Management Board Office
- Working in the field at any health facility settings, e.g. health center.

Since the focus of this survey was to observe the performance of CHOs working at health facility settings in the practice area and the instruments have been designed for that purpose, questionnaires of CHOs working on the field were extracted for further sampling technique. The Chief Health Officer then gave information on the number of health facility settings in the area including the number of local government areas. Based on the above information, 4 local government areas with primary health care facility settings were finally selected in each State.

Table 18 shows stratification of Nigeria which is composed of 19 states into 3 Zones. The author adopted the stratification developed and being used by the Federal Ministry of Health (Dr. Kolowole personal communication). This is also based on similar of health facilities, health status, and health manpower utilization.

### Stage 2

Random Sampling Technique for Choice of Site to select sample of CHOs for study.

This stage involved obtaining a random sample of States in each zone as stratified above. For this purpose, the author aimed at 50% of State selection in each zone. A total of 10 states were selected with the hope that these states would provide adequate representatives of samples of CHOs for field survey. States with asterisks in table 18 represent the 10 states.

Table 19 presents a random sample of Local Government areas selected in each state. A total of 4 of such areas represent settings where CHOs were observed in the field.

### Stage 3

Table 20 presents the total distribution of 54 CHOs selected in all the 10 states for field observation. These sample of 54 finally selected in each State represents 100% of all CHOs working in each Local Government areas. Another factor responsible for selecting 4 local government in each State was that the author had 4 interviewers to collect data in the field.

Table 18. 19 States (Nigeria) Stratified Into Three Zones

Zone A	Zone B	Zone C
1. Sokoto State	1. Niger State	1. Lagos State
2. Kaduna State	2. Kwara State	2. Ondo State
3. Kano State	3. Plateau State	3. Oyo State
4. Bauchi State	4. Gongola State	4. Ogun State
5. Borno State	5. Benue State	5. Bendel State
		6. Imo State
		7. Cross River State
		8. River State
		9. Anambra State

♦ States randomly selected for this study

Table 19. List of Local Government areas randomly selected in each zone of the States.

<u>Zone A</u>	<u>Zone B</u>	<u>Zone C</u>
1. <u>Koduna State</u>	1. <u>Niger State</u>	1. <u>Lagos State</u>
Auchan	Agoie	Somolu - Bojuloiye
Ikaro	Chanchaga	Oguntolu Clinic
Melumfashi	Tundun Wada	Ifo Ota - Ilogbo
Sebongeri-Zaria	Lapoi	Ikeja (Lagos Municipal)
2. <u>Kono State</u>	2. <u>Kwara State</u>	2. <u>Oyo State.</u>
Kurna Asobe ) Kono	Asa	Ejigbo
) Metropo-	Ifelodun	Iloro
Zorio Road ) litan	Moro	Moletu Iboropa Municipal
Ringin	Oke Oyi	Moreplontotion (Ibodon - Municipal)
Mudil		
3. <u>Borno State</u>	3. <u>Plateau State</u>	3. <u>Bendel State</u>
Damaturu	Barkin-Ladi	Ewu
Gujba	Bukuru	Ovwion
Ngala	Kuru	Ekiaddor
Bursori	Vom Vet (Jos - Metropolitan)	Orhiomwon
		4. <u>Cross River State</u>
		Akampa
		Ikotonin
		Iwuru
		Odukpani.



Table 20. Total Number Of CHOs Selected In Each State For Observation In The Field

Kano State	5 CHOs
Kadunna State	5 CHOs
Borno State	5 CHOs
Niger State	5 CHOs
Kwara State	5 CHOs
Gongola State - replaced by Plateau	5 CHOs
Lagos State	6 CHOs
Oyo State	5 CHOs
Bendel State	8 CHOs
Cross River State	5 CHOs

## 5.9 Field Survey Activities

Field activities consisted of various strategies, concrete planning and organization. It also involved extensive travelling. Organization of the field survey involved the following steps:

- a. Discussion with the Federal Ministry of Health-Director of Primary Health Care Unit, Lagos.
- b. Discussion with the Chief Health Officers of each State Ministry of Health, during a meeting held in Lagos and attended by almost all of them or their representatives.
- c. Discussion with the Director, Institute of Child Health and Primary Health Care of College of Medicine, Lagos.
- d. Training of observers.
- e. Pretesting of instruments and necessary modification.
- f. Data collection.

Prior to the field study the investigator had several discussions with the Director of the Primary Health Care Unit, Federal Ministry of Health, Lagos who is the supervisory agent for primary health care issues including training of health workers in Nigeria. This study was confronted with several problems such as lack of reliable data, logistics, and location of CHOs in their respective states of origin, which had to be solved. Reliable information about CHOs was not available anywhere except from the Chief Health Officer of each state. Many of these problems were overcome through the support provided by the director of the Primary Health care unit of the Federal Ministry of Health. (See Appendix 8)

At a meeting of all the Chief Health Officers or their representatives held in Lagos in December, 1983, permission was granted on request to address these officers. The full detail of the survey was discussed, and their cooperation and assistance were solicited. Response was encouraging as many felt the survey was relevant, necessary and would be useful. Information about CHOs was gathered from these Officers which later helped in the design of the study. An estimated number of CHOs working in each state at that period was obtained.

Another important point which is noteworthy and which helped tremendously in this study was the role of the "Coordinator" played by the Chief Health officers. Postal services and information systems are poor in Nigeria. To rely on sending questionnaires through the mail with good response rate would have been a problem even if the location of CHOs could be identified. CHO questionnaires in each state were personally delivered by the author to each Chief Health Officer accompanied by an official letter by the Director of Primary Health Care Unit (FMOR) requesting cooperation from the Chief Health Officer to ensure that the enclosed questionnaires were distributed, and completed

questionnaires returned to the Ministries by the CBOs. This exercise ensured that each CBO presently working in any of the 19 states would receive a copy.

Similarly, the Director of the Institute of Child Health and Primary Health Care of the College of Medicine, Lagos provided 4 trained observers on request. The approval was a sacrifice by the department, which had several ongoing research projects by members of staff requiring the services of these observers. For this reason, the field activity study was designed to fit the time schedule established by the department. The observers were allocated from the first week in February 1984, to the end of March 1984, for the entire process of data gathering.

#### 5.10 Training Of Observers

The Institute of Child Health and Primary Care of the College of Medicine, Lagos, provided 4 trained observers on request. These 4 observers are full fledged members of staff of the evaluation research unit of the department. They have been fully trained in the use of these forms in the

past. Nevertheless, the forms and the methodology were carefully discussed and all essential details explained. One day was spent at Somolu Clinic with the observers for this purpose. The observers displayed a high sense of ingenuity and expertise which they had gained previously.

### 5.11 Pretesting

This was carried out at the Somolu Clinic in Lagos on 6 CMOs for 2 working days starting from 8 a.m. until 1:30 p.m. using the same observers previously discussed. Specific problems and difficulties that could be encountered were noted and corrected. The pretest was conducted in October 1983. This helped in the final revision and modification of the instruments. The forms were finalized and printed for the main study.

### 5.12 Data Collection

Data collection began in the first week of February 1984, and progressed for 8 weeks until the end of March 1984.

During this time, 54 CHOs were observed in 10 states using work sampling and task analysis techniques simultaneously for a period of 2 days at approximately 5 hours each day.

For activity work sampling one observer directly followed and recorded the activities of each CHO. In some clinics there were 2 CHOs and on such occasions observations on each were recorded on separate forms. These interviewers were well experienced and had previously participated several times in this kind of study. Nevertheless, constant checks were made by the author to ensure consistency throughout the field survey.

#### Work Sampling

In recording data, the observer had a pencil with him at all times. Using his wrist watch with a sweep second hand at the beginning of the observation period, the first observation was made when the minute hand of the observer's wrist watch reached the first even minute mark, and the sweep second hand passed twelve. Thereafter, observations were recorded of what was actually happening at

that instant. This observation and recording continued throughout the working day.

Time spent on personal or non-productive activities were recorded. Time spent in non-activity such as waiting for patients or walking within the premises for official purposes were recorded. This technique served the purpose of highlighting the distribution of time CHOs spent in various activities not previously known.

### 5.13 Task Analysis Technique Competency Rating

In the context of this study, "quality" of tasks performed were judged implicitly by the wording of instructional objectives in the CHO curriculum. Ten categories of functions which related to health problems and were frequently performed at health facility settings were selected and used. The author herself used continuous observation techniques on these 10 specific tasks to assess how competent CHOs were in performing the tasks as taught (Appendix 6).

- Task #1: History taking has 17 sub-task observations.

- Task #2: Physical examination has 36 items.
- Task #3: Assessment of nutrition status contained 7 items.
- Task #4: Conduct health education contained 4 items.
- Task #5: Haemoglobin estimation contained 5 items.
- Task #6: Maintenance of birth and death register contained 5 items.
- Task #7: Control of communicable diseases contained 4 items.
- Task #8: Care of handicapped persons contained 4 items.
- Task #9: Job description for BHSS contained 8 items.
- Task #10: Manage and maintain drug supply contained 10 items.

With pencil and paper each item as listed above were assessed using CHOs curriculum instructional objective as criteria. Each task was observed from the beginning until its completion. For uniformity, tasks #1 and #2 were observed when CHOs were attending to new patients or to patients obviously needing full physical examination. Tasks



6, 7, 8 and 9 were indirectly assessed by checking clinic records for verification to support visual observation.

All CHOs observed were reassured of confidentiality and were free performing their functions. The author did not criticize, and no intervention of any sort occurred during the period of observation while CHOs were attending to patients. One-half day each day was spent at each clinic and each task was observed more than once on each CHO.

At the end of each observation day, all data were checked by the investigator for completeness and consistency by the author.

#### 5.14 Summary of Field Activity And Field Supervision

The team traveled throughout the period of data gathering as a unit from one state to the next according to official schedule planned with each State Ministry of Health. The team stayed together in the same hotel. This proximity reduced logistical difficulties and ensured supervision process throughout.

Each Ministry provided transport facilities generously which enabled the team to reach any CHO at any location. Each morning during the field survey, the transports provided by the Ministry would arrive to take each observer to the assigned health center. Each observer would stay in the same clinic, observing the same CHO(s) for the 2 days. The author was allocated a separate vehicle to move around the clinics for checklist survey. One half day was spent with each CHO(s) and this was found adequate to collect sufficient data as pre-determined. All the CHOs were well covered in all the states. In some states the distance from one CHO or clinic to another was as much as 200 kilometers.

The field survey in each state continued for 2 full working days but the team usually arrived a day before the field survey to interact with the Ministry of Health staff, Health Management Board, training institution, if any, in the state and to arrange smooth field data gathering.

### 5.15 Data Processing

All of the above instruments were subjected to thorough checks by the author herself for illegal characters, blanks and legibility. This involved considerable difficulty, however, every effort was made to control for quality of the data, and shortcomings identified were corrected.

Individual questionnaires were coded onto 1 IBM card. Institutional questionnaires were coded onto 3 different IBM cards. Faculty questionnaires were coded onto 4 different IBM cards. Policy questionnaires were coded onto 1 IBM card. Work-sampling information were coded onto 4 IBM cards. Task analysis was also coded onto 4 IBM cards.

### 5.16 Data Cleaning Procedure

After the data had been thoroughly checked for illegal characters, it went to the computer center to be keypunched and then read into the computer. The copy was checked.

### 5.17 Method Of Statistical Analysis

Method of analysis in this study employed 3 stages. The first stage included preparation of a clean data set and generation of frequency distributions to verify general completeness of the data set. The second stage of analysis focussed on systematic computation of dependent variables which are (a) CHOs Self-Perceived Competence, (b) CHOs Observed Performance, and (c) Problems in Job Performance. The mean scores and standard deviations were calculated for performance (both self-perceived competence and observed performance) within each task.

In the third stage, associations were examined between the dependent and independent variables. When both variables were categorical, the chi-square test was used. When the dependent variable was continuous and the independent variable had 2 levels, a t-test was used to test differences between the levels. When the independent variable had 3 or more categories an analysis of variance was used to compare dependent variable means across classes. Linear regression was used to measure association between continuous variables.

Finally, work sampling (time and motion study) findings are presented. This involves a description of work activities of CBOs at various health centers. The total amount of time spent on each type of activity was summed and divided by the total number of days CBOs were observed to give daily averages in minutes. Average time expressed as percentage of total work time for the CBO's in each activity are reported. Analytic calculations were computed and executed using Statistical Analysis System version 9 (1983).

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## CHAPTER VI

### FINDINGS AND RESULTS

#### 6.1 Introduction

The objectives of this study have been to examine various factors which could affect the activities and performance of CHOs in the delivery of primary health care services in communities in Nigeria. A significant part of the objectives was to provide baseline data about the training programme (i.e. how many have been trained, where and their state of origin). Similarly, descriptive information was to be provided about CHO utilization patterns in each state together with the extent of the problems which might be mitigating against effective performance of their functions. Other objectives being to provide information as to their perceived educational and personal needs which might enhance future performance. Furthermore, hypotheses stated which related to relationship between variables of interest were to be explored.

## CHAPTER VI

### FINDINGS AND RESULTS

#### 6.1 Introduction

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The focus of the presentation of findings and results would be descriptive rather than predictive in order to meet the objectives stated. Results of hypotheses tested would be presented in order to establish relationships. No attempts were made to establish causal relationships among variables established because of the type of data, which did not permit adequate multivariate analysis.

Results of the study are therefore in three sections. Section one deals with a description of the training of the CHOs in the institutions and how the CHOs are distributed in the 19 states and capital territory of Nigeria.

Section two presents the findings from 384 CHOs in all states as follows:

- I. An assessment of perceived training needs of CHOs in all states including their professional background and experience prior to training.
- II. Institutions attended and the descriptive perception of CHOs' about the adequacy of their training and quality of job performance.
- IIIa. Utilization of CHOs after training.
- b. Years of experience after training.



IV. Descriptive perception of CHOs competence and problems in their job performance.

V. Correlates of problems in job performance.

Section three presents results obtained from the observation of a sample of 54 CHOs from all states on variables (I) to (V) in section two using:

a. A work sampling study (Time and Motion study).

b. Correlation between self-rating and observed scores.

c. A checklist inventory of tasks evaluation.

#### 6.2 Section 1 - Description Of CHOs' Training Programme 1979-1983

Before considering CHOs' activities and factors that influence their performance, it is important to examine the role and accomplishments of the institutions charged with their training over the years. It is imperative to understand the role and responsibilities of the institutions in the training of CHOs both in terms of quantitative and qualitative aspects.

Table 21 presents a list of the 9 training institutions in the country including the capital

territory - Abuja. Institutions with one asterisk are located in the northern zone. Institutions with two asterisks are located in the middle belt zone, while institutions with three asterisks are located in the southern zone (see Figure 3) - Map of Nigeria).

The location of the institutions has no bearing or known adverse effect on the admission procedure of CHOs to any of the training institutions. Candidates from any state of origin can apply for admission to any of the institutions. The Federal Government, however, is responsible for the tuition of one CHO from each state nominated by the Chief Health Officers of Ministries of Health once the candidate is able to satisfy the prerequisite for admission. Any additional candidate would be self-sponsored or supported by his/her State government or other sponsor.

Further along, this table shows the number of CHOs trained each year by each of the 9 training institutions in Nigeria from 1979 to 1983. Training commenced in 1979 by 4 institutions, producing 97 CHOs in that session. By 1980, all the 9 institutions had been fully engaged in the training of CHOs and this doubled the number of CHOs trained. By 1982, the number of CHOs increased to 252 but declined to 238 in 1983. The total CHOs trained by

all the 9 institutions over this period (1979-1983) was 779.

The University of Benin Teaching Hospital (UBTH) trained the highest number of CHOs every year since the inception of the programme and accounted for 22.8% of all the CHOs. Five (5) other institutions each trained approximately half the output of UBTH. These together accounted for 53.6%. The University of Colabar, University of Ilorin, and the School of Health Technology, Jos trained 8.9%; 6.5% and 8.2% respectively.

Table 22 presents the number of CHOs trained by all institutions by State of origin from 1979-1983. The table shows that 3 States viz: Bendel, Benue and Plateau States have larger percentages of CHOs than other States while Imo State has the least CHOs. It is also to be observed that CHOs are sponsored privately by institutions and utilized either in research, training or delivering health care services. Federal Capital Abuja sponsored 9 CHOs within the last 2 years preceding this study. However, in terms of CHOs population ratio based on projection of 1963 census and the manpower requirements of CHOs in the community as formulated by the Federal Government

Table 21. Number Of CHOs Trained By Each Institution From 1979-1983

Institution	1979-80	1980-81	1981-82	1982-83	Total	%
ICB & PHC Lagos***	23	14	21	22	80	10.3
Dept. PSM, UCH Ib.***	20	17	24	21	82	10.5
UBTH Ekpoma Benin***	41	38	57	42	178	22.8
Univ. of Nig. Teaching Hospital Enugu**	13	24	27	26	90	11.6
University of Ife***	-	22	27	36	85	10.9
ABU, Zaria*	-	21	32	27	80	10.3
University of Calabar***	-	24	23	22	69	8.9
University of Ilorin**	-	13	19	19	51	6.5
School of Health Tech. Jos.**	-	19	22	23	64	8.2
<b>TOTAL</b>	<b>97</b>	<b>192</b>	<b>252</b>	<b>238</b>	<b>779</b>	<b>100.0</b>

\*Institutions located in Zone A  
 \*\*Institutions located in Zone B  
 \*\*\*Institutions located in Zone C

Table 22. Number of CHOs Trained By The 9 Institutions For Each State 1979-1983\*

States	1979-80	1980-81	1981-82	1982-83	Total	Population Per CHO***
Lagos	2	2	2	6	12	222,400
Oyo	11	10	12	24	57	145,726
Ogun	4	5	1	5	15	164,887
Ondo	8	2	12	10	32	136,028
Bendel	20	19	28	10	77	50,966
Benue	6	15	26	24	73	53,018
Borno	4	6	6	12	28	170,714
Bauchi	1	6	8	6	21	184,624
Anambra	6	12	10	12	40	143,395
Kwara	4	16	16	22	61	44,819
Plateau	5	25	30	17	77	41,433
Ibo	2	0	1	2	5	1,171,320
Cross Rivers	2	11	16	15	44	126,054
Gongola	4	8	11	8	30	138,483
Edunna	0	11	13	10	34	171,984
Kano	3	11	6	3	23	400,387
Niger	3	9	19	23	54	35,274
River	7	10	5	10	34	80,667
Sokoto	4	8	16	14	43	168,321
Fed. Capital Abuja	0	0	4	5	9	-

Table 22. (Cont'd)

Institutions	1979-80	1980-01	1981-82	1982-03	Total	Population Per CHO***
Life Univ. Teaching Hospital**	-	3	1	3	5	-
Institute of Health ABU**	-	1	1	2	4	-
University of Jos**	-	-	-	1	1	-
<b>TOTAL</b>					<b>779</b>	

\*Information generated from the institutions.

\*\*Number of CHOs added to states of origin.

\*\*\*Based on 1982 projected population (Bangboye - personal communication). (Medical Statistician, PSM, UCH, Ibadan).

(1:50,000 population) only Niger; Kwara and Plateau States have been able to meet the target; while Imo State lagged behind in the production of CHOs compared with all the other states.

In summary, based on data obtained from the institutions and presented in Tables 21 and 22, it could be concluded that these institutions have been able to discharge their responsibilities in the training of CHOs presented by the states. In fact, some of the institutions have accepted candidates from private organizations such as missions and University institutions utilizing CHOs for health care delivery, research projects, and teaching functions. In all probability this might account for the difference in figure of the number of CHOs reported by Chief Health Officers to be working at the time of the study (584) and the total number trained between 1979 and 1983 (779).

Caution is needed in interpretation of projected CHOs: population ratios presented. The fact that there is a paucity of reliable data about health indices and population figures is an important factor to bear in mind. The orthodox method of using population to estimate demand for human resources requires a new approach (Baker, 1967;

Taylor, Dirican, Deuschle, 1968; Hall, 1969).

### 6.3 Section 2 - Description Of Assessment Of Training Needs Of CBOs In All The States

In this section, data obtained from CBOs' questionnaires will be presented to show an assessment of the training needs of the CBOs, their perception of the adequacy of the training programme, their post-training utilization and the extent of the problems they encountered in job performance including correlates of such problems.

This study received 384 completed questionnaires from CBOs in all the 19 states. The estimated total number of CBOs obtained from the states was 584 (data provided by Chief Health Officers in the 19 states). This represents 65.75% response rate of CBO questionnaires. However, the non-response rate, which equals to (33.3%) or 195 CBOs, could be accounted for as a result of the following reasons obtained by personal interview and verification:

1. Study Leave - An unknown number of CBOs were on study leave for more advance training (e.g. management or diploma in public health courses).



2. Problems of Poor Communication - Many CHOs posted their questionnaires to the author instead of sending them to the Chief Medical Officers. Twenty-five such questionnaires were received too late for data processing which started in the month of July 1984. An unknown number were never received by the author.
3. Untraceable Due to Lack of Knowledge of their location - Some CHOs were only identified existing during the field survey, but could not be contacted, e.g. CHOs in the capital territory, Abuja.
4. Deliberate Non-Response - Some CHOs were reported by Chief Health Officers as having failed to respond despite repeated letters of reminder, and many repeated visits by the author.

As a result of these problems, responses from 195 CHOs were not available for analysis. From this, it could be concluded that there might have been some differences in the characteristics under investigation present among those who responded and those who did not.

Table 23 shows the professional background of these cadres prior to training. 72 CHOs were Public Health nurses, 183 CHOs were Higher Rural Superintendents while 129 CHOs were Registered Nurses/Superintendents/Midwives or Community Midwives. It should be noted that all Rural Health Superintendents are male and all Public Health Nurses are female while Registered Nurses/Community Midwives are a mixture of male and female.

Table 24 shows the distribution of CHOs by institutions attended. Any CHO can attend any of the 9 institutions provided she is able to satisfy the admission criteria of that institution. This usually involves a pre-test and an interview. The Ministry of Health of each state nominates candidates so they can be financially sponsored by the Federal Ministry of Health. In this study, 14% of CHOs indicated they were responsible for their own tuition. Furthermore, this table shows that among the 384 which responded to the questionnaire, more had been trained at the University of Benin Teaching Hospital than at any of the other 8 training institutions. This distribution corresponds with that of the output of the training institutions

(see Table 21).

Table 25 shows CHOs perception of the adequacy of training in each curriculum unit and overall. Seventy-two percent (72%) perceived training received at institutions to be very good in unit 1 (General Health Care). In respect of unit 2 (Personal Health Care), 67% gave similar response. In contrast, only 57% of CHOs reported that unit 3 (Organization and Management) was very good. Overall, 254 CHOs (65.5%) reported that adequacy of training was very good. In summary, CHOs perceived training in units 1 and 2 to be very good compared with that in unit 3.

Table 26 presents CHOs responses to grading of their practical training in each unit of curriculum. Only about 56.8% and 55.2% CHOs considered their practical training in units 1 and 2 to be "very good" respectively, while fewer still (41%) thought practical training in unit 3 was "very good."

Table 27 shows CHOs responses to the need for more theoretical or practical training in each unit of the curriculum. About 70% of CHOs reported that they did not require more theoretical training in units 1 and 2 of their curriculum while 59% gave similar responses in respect to unit 3.

Table 23. No and Percent of Professional Background Prior To Training

Professional Background	No	%
Public Health Nurses	72	18.8
Higher Rural Superintendents	183	47.6
Registered Nurses/Community Midwives	129	33.6
TOTAL	384	100.0

Table 24. Distribution of Institutions Attended By 384 CHOs

Institutions	Frequency	Percent
Lagos	38	9.90
Ibadan	51	13.28
Ife	34	8.85
Benin	77	20.05
Nsukka	44	11.46
Calabar	46	11.98
Zaria	27	7.03
Ilorin	35	9.12
Jos	32	8.33
<b>Total</b>	<b>384</b>	<b>100.0</b>

**Table 25. Number And Percent of CHOs Responses to Adequacy of Training In Each Curriculum Unit And Overall**

CHOs Responses	Unit 1	Unit 2	Unit 3
Very Good	278 (72.4)	258 (67.2)	218 (56.8)
Good	106 (27.6)	126 (32.8)	166 (43.2)
<b>TOTAL</b>	<b>384</b> <b>(100.0)</b>	<b>384</b> <b>(100.0)</b>	<b>384</b> <b>(100.0)</b>

**Note** Possible Responses presented in the questionnaire were "Very Good" "Good" and "adequate". However because of very few numbers of responders selecting "adequate" this has been merged with "good" for purposes of analysis.

Table 26. Number And Percent Of CHO's Responses In Grading Of Practical Experience In Each Unit Of Curriculum

CHO's Responses	Unit 1	Unit 2	Unit 3
Very Good	218 (56.8)	212 (55.2)	158 (41.1)
Good	166 (43.2)	172 (44.8)	226 (58.9)
TOTAL	384 (100.0)	384 (100.0)	384 (100.0)

Table 27. Number And Percent Of CHOs Responses To The Need For More Training In Theoretical And Practical Experience In Each Unit Of Curriculum

		Unit 1		Unit 2		Unit 3	
		Theory	Practical	Theory	Practical	Theory	Practical
Do you require more training?	Yes	110 (28.6)	150 (39.1)	105 (27.3)	150 (39.1)	149 (38.8)	200 (52.1)
	No	268 (69.8)	227 (59.1)	271 (70.6)	227 (59.1)	228 (59.4)	174 (45.3)
	Don't know	6 (1.6)	7 (1.8)	8 (2.1)	7 (1.8)	7 (1.8)	10 (2.6)



Table 27. Number And Percent Of CEOs Responses To The Need For More Training In Theoretical And Practical Experience In Each Unit Of Curriculum

		Unit 1		Unit 2		Unit 3	
		Theory	Practical	Theory	Practical	Theory	Practical
Do you require more training?	Yes	110 (28.6)	150 (39.1)	105 (27.3)	150 (39.1)	149 (38.8)	200 (52.1)
	No	268 (69.8)	227 (59.1)	271 (70.6)	227 (59.1)	228 (59.4)	174 (45.3)
	Don't know	6 (1.6)	7 (1.8)	8 (2.1)	7 (1.8)	7 (1.8)	10 (2.6)

In responses by CHOs to the need for more practical experience, 59.1% reported they did not need further training in units 1 and 2. However, 52% expressed desire for more practical experience in unit 3. In summary, Tables 25, 26 and 27 show that CHOs consistently identified training in unit 3 to be less adequate than that in units 1 and 2.

#### 6.4 UTILIZATION PATTERN OF CHOs IN THE STATES

Table 28 presents the utilization pattern of CHOs. Two hundred and twenty nine (59%) were in the practice area delivering primary health care at various health care facility settings. Eighty-two CHOs (22%) were teaching at schools of Health Technology. Seventy one CHOs (18%) were performing administrative functions at Ministries of Health or Health Management Boards, while 2 CHOs (1%) were working in hospitals.

Table 29 shows that at the time of the present study 92 CHOs (24%) had had less than 1 year of professional experience; 30% had had between 1 - 2 years experience and 46% had had 2 or more years of experience after training. An important factor about the variable "Years of Experience" which needs clarification was that individual CHOs might not necessarily have been practicing in the field immediately after training, or might have been assigned to other areas instead

of clinical function.

Table 30 presents the number of years CHOs had been practicing in their current places of work. There was no difference between the distribution in Table 29 and 30.

In summary, almost one-half of the sample in this study have had 2 or more years of professional experience at their present place of work at the time of the survey.

#### 6.5 CHOs Self-Perceived Competence In 16 Tasks by Self-Rating

Table 31 reveals CHOs self-perceived competence in self-evaluation rating of 16 tasks. Many CHOs reported they could perform 80% of the tasks very well. However, four tasks (with asterisks) were identified to have been rated less than other tasks indicating that CHOs felt they could not perform these tasks as well as those to which they gave higher ratings. These tasks were not regrouped to correspond with each CHO curriculum unit because they are not adequate for such exercise.

Table 28. Utilization Of CHOs In The States According To Categories Of Function Performed

Functions	Number	Percent
Working in health facility settings	229	59
Teaching at Schools of Health Technology	82	22
Working at State Ministries of Health	71	18
Working in Hospital	2	1
<b>TOTAL</b>	<b>384</b>	<b>100.0</b>

Table 29. Years Of Experience After Training

	Number	Percent
< 1 year	92	23.96
1-2 years	114	29.69
> 2 years	178	46.35
<b>TOTAL</b>	<b>384</b>	<b>100.0</b>

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Table 30. Years Of Experience At Present Place Of Work

	Number	Percent
< 1 year	100	26.04
1-2 years	103	26.82
> 2 years	181	47.14
TOTAL	384	100.0

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Table 31. CBOs Self-Perceived Rating In 16 Tasks

N = 384

List of Tasks	Response Very Well
History Taking	81.8
Physical Examination	78.9
Conduct Health Education	77.6
Screen Nutrition Problems	66.1
Weigh Patients	86.5
Conduct ANC	• 58.9
Perform Haemoglobin Test	• 54.4
Give Immunization	80.2
Use Standing Order Correctly	78.4
Recording and Reporting Clinic Act	76.1
Evaluate Clinic Activities	62.2
Supervision	77.3
Teach Lower Cadres	73.2
Plan for Lower Cadres	67.2
Plan for BHSS	• 53.4
Community Activities	• 52.6

•See text

## 6.6 Descriptive Characteristics Of CHOs Response To Problems Encountered In Job Performance

A major aim of this study is to identify what problems confront CHOs in the course of job performance.

The primary objective of the government in the development of this cadre is to provide health coverage and improve health care service to more persons, in the rural areas. For this objective to be realized, efforts should be made to identify any confounding factors which may jeopardize its success.

In this study, in order to identify the extent of the problems which are encountered by CHOs in clinical areas, questions were asked to explore major obstacles preventing them from adequately performing their health duties. The questions asked were:

- Do you have problems in the course of job performance? (Question 16)

- Are you able to apply all skills and knowledge acquired at the training institutions effectively at your place of work?



(Question 13)

- Are drugs, vaccines and equipment always regularly available? (Questions 14 and 15).

It is of paramount importance to understand the relationship between these factors and CHOs performance in clinical settings.

Other problems explored were related to the administrative organization, such as lack of cooperation with clinic directors, lack of cooperation with State Ministers; lack of personnel and transport and finally, to other factors such as incentives and motivation.

During the field survey, it became apparent that other problems existed beyond those listed in the questionnaire, such as lack of recognition, lack of opportunities to fully utilize their acquired skills and knowledge in the clinical settings. This is assumed to be due to a misconception of the capabilities and roles of CHOs in the health care system by some existing health professionals such as doctors and public health nurses. In particular, CHOs with public health background expressed dissatisfaction with lack of recognition and professional status compared with

other professionals. It is important at this stage to report that Public Health Nurses have always been the most highly trained professionals among these cadres. Traditionally, they are trained to deliver preventive care in the community. Their training, however, lacked some clinical, administrative, educational and community participation ideology current in the CHOs curriculum.

Table 32 shows that 263 CHOs (68.5%) reported that they were having problems in the course of job performance. One hundred and twelve (112) (29.5%) reported that they were not having problems while 9 CHOs (2.3%) did not respond to the question.

Table 33 presents responses related to whether CHOs were able to effectively apply all skills and knowledge acquired at training institutions. 50.5% reported they were able to use all skills and knowledge effectively, while 48% reported they were not able to effectively apply all acquired skills and knowledge. The number of CHOs who did not respond to the question was 6 (1.5%).

Table 34 shows responses indicated by CHOs to availability of drugs during the year. One hundred and eight-five (185) of those working in health facility

settings stated that they had drugs for less than six months in the year, while 100 CHOs reported having drugs for more than six months in the year. Ninety-nine (99) did not respond. A majority (90 CHOs) of those who did not respond to this question were teaching at the schools of health technology or working in the Ministries of Health where patient-care is usually not carried out and therefore drugs are not normally required.

Table 35 shows responses given by CHOs to availability of vaccines at clinical settings. One hundred and sixty-four CHOs (164) reported that vaccines were available less than six-months of the year while 121 CHOs reported that vaccines were available longer than this period. Ninety-nine (99) CHOs did not respond, of which 90 CHOs were not working in the clinical settings.

Table 36 shows CHOs' responses to availability of equipment. Only 30.9% reported that equipments were always available or adequate.

Table 37 summarized CHOs' indicated responses to problems encountered in job performance relating to the system within which they were working. One hundred and Seventy-three (45.1) reported lack of resources was their problem. However further enquiry revealed that

among those who were actually working at the clinical settings 60.7% reported lack of resources. Furthermore, the table shows that 101 CHOs (26.3%) reported lack of transport and personnel as problems. Thirty-four CHOs (8.9%) reported "uncooperative directors" were their problems, while 6% expressed "uncooperative ministries" as problems. Finally, majority of CHOs 203 (52.9%) reported lack of incentives as their problems.

Table 32. Responses Given By CHOs To Inquiry About Problems Encountered In Their Jobs

	Responses	Frequency	Percent
Do you have problems in performing your job?	Yes	263	68.5
	No	112	29.2
	No response	9	2.3
TOTAL		384	100.0

Table 33. Number And Percent Of CHOs Responses To Whether They Were Able To Use Effectively Skills And Knowledge Acquired At Training Institutions

	Responses	Frequency	Percent
Are you able to effectively apply all skills and knowledge acquired at Training Institutions?	Yes	194	50.5
	No	184	48.0
	No response	6	1.5
TOTAL		384	100.0

Table 34. CHOs Responses Indicating Duration of Drug Availability In The Clinical Setting During The Year

Duration of Availability	Frequency
< 6 months	185
≥ 6 months	100
No response*	9
No response**	90
<b>T O T A L</b>	<b>384</b>

\*No response among those working in the clinical settings

\*\*No response among those CHOs not working in the clinical settings.

Table 35. CHOs Responses Indicating Duration of Vaccine Availability In the Clinical Settings During The Year

Duration of Availability	Frequency
< 6 months	164
≥ 6 months	121
No response*	9
No response**	90
<b>T O T A L</b>	<b>384</b>

\*No response among those working in the clinical settings

\*\*No response among those CHOs not working in clinical settings.



Table 36. CHOs Responses To Availability of Equipment In Clinical Settings

Equipment Present or Not	frequency
Yes	119
No	256
No response	9
<b>T O T A L</b>	<b>384</b>

Table 37. Number And Percent Of CHOs Responses To The Extent Of Problems Encountered In Job Performance Relating To The System

List of Problems	Responses	N	%
Lack of drugs/equipment	Yes	173	45.1
	No	112	29.2
	No response	99	25.7
Uncooperative Director	Yes	34	8.9
	No	341	88.8
	No response	9	2.3
Uncooperative Ministry	Yes	25	6.5
	No	350	91.2
	No response	9	2.3
Lack of Personnel and Transport	Yes	101	26.3
	No	274	71.4
	No response	9	2.3
Lack of Incentives	Yes	203	52.9
	No	172	44.8
	No response	9	2.3

## 6.7 Correlates Of Problems CHOs Encountered In Job Performance With Independent Variables Of Interest

In order to perform their clinical duties satisfactorily it is vital that CHOs encounter as few problems in the practice area, especially when many of them are working in rural and remote areas with little supervision.

Evolution of practice settings where CHOs are performing health duties become major factors in determining or predicting the success or failure of achievements of primary health care objectives. In order to identify, examine and highlight the magnitude of their problems, all the independent variables have been cross-tabulated with Problems Encountered In Job Performance by CHOs in the course of performing their functions in PHC.

Table 38 shows significant association between professional background of CHOs and the extent to which they encountered problems in performing their job. Generally, a majority of the CHOs, irrespective of their professional backgrounds, admitted that they were

encountering problems in performing their jobs adequately. However, a significantly higher number of CHOs with PHN background were encountering more problems followed by CHOs with RN/CM background compared with CHOs with RHs background ( $\chi^2 = 14.2$ ;  $df = 2$ ,  $p = < 0.001$ ).

Table 39 presents responses by CHOs to whether or not they encountered problems in performing their job at clinical settings cross tabulated with years of experience on the job. A higher proportion of CHOs reported they were having problems regardless of the number of years they had been practicing. The largest proportion of CHOs who reported that they were having problems were those who had 2 years or more professional experience (74%), followed by CHOs with 1 to 2 years of professional experience (68%) and those with less than one year of professional experience (65%). There is significant association between years of experience and CHOs' indicated responses to problems encountered in job performance ( $\chi^2 = 3.5$ ;  $df = 2$ ;  $p = < 0.05$ ). From this data, it could be

Table 38. Association Between Professional Background and CHOs Indicated Responses To Problems Encountered In Job Performance In Clinical Setting

	Problems Encountered In Job Performance		
	Yes	No	Total
PHN	56	15	71
Professional Background			
RNS	100	69	177
RN/CH	99	28	127
Total	263	112	375

Missing value = 9

Chi - square = 16.2; df = 2; p < 0.005

Table 39. Association Between CHOs' Years Of Experience And Their Indicated Responses To Problems They Encountered In Job Performance

		problems Encountered In Job Performance		
		Yes	No	Total
Years of Experience	< 1 year	64	34	98
	1-2 years	70	33	103
	> 2 years	129	45	174
Total		263	112	375

Missing value = 9

Chi-square = 3.5; df = 2; p < 0.05

concluded that encountering of problems by CHOs is associated with the length of experience on the job. It is probable that the ability to identify or recognise problems at the clinical settings is related to length of stay on the job.

Table 40 shows CHOs' perception of adequacy of training cross-tabulated with their experience in the performance of jobs in the clinical settings in terms of extent of problems encountered. Among the CHOs who stated that their training was "very good", 32.9% admitted they were having problems performing their job compared with 24% of those who stated training was "good". There is no significant association between perceived quality of training and encountering of problems in job performance ( $\chi^2 = 2.71$ ;  $df = 1$ ;  $p = 0.1$ ). From this it can be suggested that factors other than quality of training would have been responsible for the problems encountered by CHOs in the course of performing their jobs.

Table 41 shows responses by CHOs to whether they required more theoretical training cross-tabulated by the extent of problems they were encountering in performing their jobs. 33.6% of those who expressed a need for more theoretical training had problems performing their jobs, while 27.4% of those who said they did

Table 40. Association Between CHOs Perception Of Adequacy Of Training And Encountering Of Problems In Job Performance

		Perception of Adequacy Of Training		
		Very Good	Good	Total
Problems	No	169	94	263
	Yes	83	29	112
	Total	252	123	375

Missing value = 9

Chi-square = 2.71; df = 1; p = 0.1



Table 41.

Association Between CHOs Indicated Responses To The Need For More Theoretical Training And Problems Encountered In Job Performance

		Need for More Theoretical Training		
		Yes	No	Total
Problems	No	99	164	263
	Yes	50	62	112
Total		149	226	375

Missing value = 9

Chi-square = 1.6 ; df = 1;  $p > 0.05$

not need more training were having problems. However, there is no association between CHOs indicated need for more theoretical training and problems they were having performing their jobs ( $\chi^2 = 1.6$  df = 1;  $p = >0.05$ ). This might suggest that CHOs did not see more theoretical training as a solution to problems they were having in performing their jobs.

Table 42 shows that (77.8%) of those who expressed a desire for more practical experience were experiencing problems at their jobs; while (63.1%) of those CHOs who said they did not need more training were having problems. There is a significant relationship between CHOs responses to need for more training in practical experience and problems they were encountering in performing their jobs ( $\chi^2 = 4.565$ ; df = 1;  $p = <0.05$ ). From this it can be inferred that the general feeling among the CHOs is that the problems they encountered in performing their jobs can be solved by more practical training.

Table 43 shows CHOs indicated responses to duration of drug availability cross-tabulated by problems they encountered in job performance. A significantly higher proportion of CHOs (66.5%) who

reported that drugs were available for less than 6 months during the year were having problems performing their jobs, while 48.9% of those who said drugs were available for longer than this period were having problems performing their jobs. There is significant association between the duration of drug availability and the problems CHOs encountered in performing their jobs ( $\chi^2 = 8.2$ ;  $df = 1$ ,  $p = 0.001$ ). From this, it can be suggested that the shorter the period drugs are available the more problems encountered.

Table 44 shows a significant association between CHOs' responses to duration of vaccine availability and extent of problems CHOs encountered in the performance of their jobs. A higher proportion (70.7%) who reported that vaccines were available for less than 6 months during the year were having problems performing their jobs compared with 51.2% who were having problems when vaccine were available for longer than this period ( $\chi^2 = 11.613$ ;  $df = 1$ ,  $p = 0.001$ ). From this it can be concluded that non-availability of vaccines was one of the problems CHOs were encountering at their work.

Table 42. Association Between CHO's Indicated Responses To Need For More Practical Experience And Encountering Of Problems In Job Performance

		Need for More Practical Training		
		Yes	No	Total
Problems	Yes	140	123	263
	No	40	72	112
	Total	180	195	375

Missing value = 9

Chi-square = 4.565 df = 1;  $p < 0.05$

**Table 43.** Association Between CHOs Indicated Responses To duration About when drugs are available and encountering of problems in job performance

		Duration of When Drugs Are Available		
		≤ 6 months	≥ 6 months	Total
Problems	Yes	127	46	173
	No	64	48	112
Total		191	94	285

Missing value = 99

Chi-square = 8.2; df = 1; p < 0.0001

Table 44. Association Between CHOs Indicated Responses To Duration When Vaccine Are Available And Problems CHOs Encountered In Job Performance

		Duration of When vaccine Are Available		
		< 6 months	≥ 6 months	Total
Problems	Yes	116	62	178
	No	48	59	107
	Total	164	121	285

Missing value = 99

Chi-square = 11.613; df = 1;  $p < 0.0001$

Table 45 shows a significantly lower proportion (58%) who stated equipments were available were having problems compared with (75.8%) who reported lack of equipment, among those having problems. There is significant association between availability of equipment and problems CHOs encountered in job performance ( $\chi^2 = 12.3$ ;  $df = 1$ ;  $p < 0.0001$ ).

Table 46 presents cross-tabulation of number of hours assigned to theoretical training in institutions CHOs attended by whether they had problems in job performance. Among those who attended institutions where low hours are assigned to theoretical training (64.8) were having problems performing their jobs compared with (81.1) of those who attended institutions where high hours are assigned to theoretical experience. However, there was no statistically significant association between number of hours institutions assigned to theoretical experience and problems CHOs encountered in job performance ( $\chi^2 = 2.1$ ;  $df = 1$ ;  $p > 0.102$ ). Similar results were obtained for the number of hours assigned by institutions to practical

experience cross-tabulated with problems CEOs encountered in job performance (see Table 47).

In Table 48, among CEOs who attended training institutions where less than 2 tutors are teaching 75.4 admitted having problems performing their jobs, compared with 62.6 who were having problems but attended institutions where more than 2 tutors were teaching. There is significant association between number of full-time tutors available to teach CEOs and problems they encountered in performing their jobs ( $\chi^2 = 7.3$ ;  $df = 1$ ;  $p < 0.002$  0.02). From this it can be suggested that more teachers available to teach CEOs at training institutions, leads to less problems encountered in job performance. Low number of tutors teaching at training institutions might be among the factors responsible for problems CEOs were encountering in performing their jobs at clinical settings.



Table 45. Association Between CHOs Indicated Responses To Availability of Equipments And Problems CHOs Encountered In Job Performance

		Availability of Equipment		
		Yes	No	Total
Problems	Yes	69	194	263
	No	50	62	112
	Total	119	256	375

Missing value = 9

Chi-square = 12.3; df = 1;  $p < 0.0001$

Table 45. Association Between CHOs Indicated Responses To Availability of Equipments And Problems CHOs Encountered In Job Performance

		Availability of Equipment		
		Yes	No	Total
Problems	Yes	69	194	263
	No	50	62	112
	Total	119	256	375

Missing value - 9

Chi-square = 12.3; df = 1;  $p < 0.0001$

Table 46.

Association Between Number Of Hours Assigned To CHOs Theoretical Training By Institutions And Their Indicated Responses To Problems Encountered In Job Performance

		Hours Assigned To CHOs Theoretical Training by Institutions		
		Low	High	Total
Problems	Yes	164	99	263
	No	89	23	112
Total		253	122	375

Missing value = 9

Chi-square = 2.1; df = 1; p = > 0.102

Table 47. Association Between Number of Hours Assigned To CHOs Practical Experience By Institutions And Their Indicated Responses To Problems Encountered In Job Performance

		Hours Assigned to CHOs Practical Experience by Institutions		
		Low	High	Total
problems	Yes	164	99	263
	No	89	23	112
Total		253	122	375

Missing value = 9

Chi-square = 2.1; df = 1; p = > 0.102

Table 47. Association Between Number of Hours Assigned To CHOs Practical Experience By Institutions And Their Indicated Responses To Problems Encountered In Job Performance

		Hours Assigned to CHOs Practical Experience by Institutions		
		Low	High	Total
problems	Yes	164	99	263
	No	89	23	112
Total		253	122	375

Missing value = 9

Chi-square = 2.1; df = 1; p = > 0.102

Table 48.

Association Between Number of Full-Time Tutors Teaching At CHO's Institutions And Their Indicated Responses To Problems Encountered In Job Performance

		Number of Full-Time Tutors Teaching at CHO's Institutions		
		Less than 2	2 or More	Total
Problems	Yes	166	97	263
	No	54	58	112
Total		220	155	375

Missing value = 9

Chi-square = 7.3; df = 1; p = <0.002

## 6.8 Description Of Sample of CHOs' Activities And Evaluation of Performance In The Clinical Setting

In this section, results of CHOs' observed activities and performance are presented. The fifty-four CHOs in this study constitute a formal sample, randomly selected as indicated earlier. The research therefore presents findings and results of a cross-sectional study designed to assess CHOs activities in PHC.

Effective evaluation of this sample was based on objective measure rather than intuition. If the sub-sample of 54 is similar to the larger sample with respect to variables measured on all 384 CHOs, then the findings with respect to objective evaluation are more likely to be true of the larger population. Therefore, similarity between sample of 54 and larger population will be checked.

In this section the issues to be addressed are ; First, to generate frequencies which will provide descriptive information about the sample observed in

the field. This will show trend as to whether findings are similar or different compared to the larger population. Second, result of work sampling (time and motion study) are described. Third, summary statistical analysis of CHOs performance evaluation are presented. This includes correlation results between CHOs self-rating and observed rating scores.

Fifty-four (54) CHOs were observed at various health facility settings delivering primary health care in their respective states either in the cities or in the rural areas.

Table 49 presents the type of location of health care facilities where CHOs were found working. Comprehensive Health Centers served as referral centers for all rural health centers in the area. All health centers observed during the field survey had beds ranging from 5 to 15 for patient admission.

While doctors were present in all of the six comprehensive health centers visited, CHOs with other PHC teams were observed to be functioning alone in many health centers. Usually, CHOs were the overall leaders supervising many of the health centers' activities and lower cadres in rural areas.



In this study, prior to training: 11 CHOs (20.37%) were Public Health Nurses; 19 CHOs (35.19%) were Rural Health Superintendents; 24 CHOs (44.44%) were Registered Nurses/Superintendents, Midwives or Community Midwives (see Table 50).

Table 51 shows the distribution of the CHOs sample by institution attended. The data shows that the highest proportion of CHOs in this study attended I.C.H. and P.H.C. Lagos and the Department of P.S.M. U.C.H. Ibadan respectively. Only 2 CHOs (3.7%) attended the University of Calabar.

Table 52 details CHOs' perception of adequacy of training in each curriculum unit and overall. A higher proportion (79.63%), reported that adequacy of training received was "very good" in unit 1 (General Health Care), compared with (20.37%) who reported the unit as "good"; while no CHO felt unit 1 was "adequate" or "poor."

In respect of unit 2 (Personal Health Care) 38 CHOs (70.37%) perceived training received at institutions as "very good," while 16 CHOs (29.63%) expressed that the unit was "good." In contrast, in unit 3 (Organization and Management) only 27 CHOs (50%) perceived the training received as "very good;" while 19 CHOs (35.19%) reported the unit as

"good", and 8 CHOs (14.81%) considered unit 3 as adequate. Regarding overall training, 90.74% of CHOs perceived the training received at institutions as "very good", 5.56% reported their training as "good", 3.7% thought it was "adequate", while nobody reported training as "poor". CHOs' perception of adequacy of training received at institutions in this table were similar to those obtained among the larger population. Fewer CHOs considered unit 3 (Organization and Management) as very good compared with units 1 and 2 of CHOs curriculum, while the majority reported their training overall as very good.

Table 53 shows that a higher proportion of CHOs 62.9%; and 57.41% respectively graded units 1 and 2 of their practical experience in the curriculum as "very good" while a smaller proportion 33.3% and 37.04% respectively graded the units as "good" and a relatively smaller proportion still 3.78% and 5.56% respectively considered practical experience in these 2 units as "adequate".

In contrast, in unit 3 (Organization and Management) only 38.89% of CHOs graded practical experience as "very good" while a significantly higher proportion, 50% graded this unit as being "good" and 11.11% considered the unit as "adequate."

Table 54 presents CHOs indicated responses to their desire for more training in theoretical and practical experience in each unit of the curriculum and overall. In unit 1 (General Health Core) 42 CHOs (77.8%) stated that they did not require more theoretical training, while fewer still 55.6% expressed a similar opinion for practical experience. However, in this same unit, 12 CHOs (22.2%) expressed desire for more theoretical training, while a higher proportion of CHOs 24 (44.4%) expressed desire for more training in practical experience.

In unit 2 (Personal Health Core) similar findings were obtained. A higher proportion (81.5%) did not require more training in theory, while fewer still (55.6%) gave a similar response

for practical experience. Furthermore in this unit, fewer CHOs, 10 (18.5%) expressed desire for more theoretical training while a higher proportion 44.4% requested for more practical experience.

In respect of unit 3 (Organization and Management), a higher proportion of CHOs (70.4%) did not need more training in theory. A smaller proportion of CHOs (40.7%) gave same reply for practical experience. In contrast, 16 CHOs (29.6%) expressed desire for more theoretical training, while a higher proportion (59.3%) compared with CHOs in other units expressed desire for practical experience.

In summary, a higher proportion of CHOs expressed desire for more practical experience in each unit of the curriculum. Again, this result corresponds with the results obtained from the larger group. The sample distribution is similar to that of the rest of the population with respect to indicated need for theoretical training and for more practical training.

Table 49. Type Of Facility In Which CHOs Were Found Working

N = 54

	No.	%
Comprehensive Health Care	6	11.1
Rural Health Center	32	59.3
Maternity Health Center	3	5.6
Child Health Center	13	24.0
<b>TOTAL</b>	<b>54</b>	<b>100.0</b>

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Table 50. Number And Percent Of CBOs Professional Background Prior To Training

Professional Background	Number	Percent
Public Health Nurses	11	20.37
Higher Rural Health Superintendents	19	35.19
Registered Nurses/Community Midwives	24	44.44
TOTAL	54	100.0

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Table 51. Number and Percent OF CBOs By Institutions Attended

Institutions	Number	Percent
1 I.C.H. & P.H.C. Lagos	9	16.7
2 Dept. PSM, U.C.H. Ibadan	9	16.7
3 U.B.T.H. Ekpoma, Benin	3	5.6
4 University of Nigeria Teaching Hospital, Enugu	8	14.8
5 University of Ife	3	5.5
6 A.B.U. Zaria	6	11.1
7 University of Calabar	2	3.7
8 University of Ilorin	8	14.8
9 School of Health Teaching, Jos	6	11.1
<b>TOTAL</b>	<b>54</b>	<b>100.0</b>

Table 51. Number and Percent OF CBOs By Institutions Attended

Institutions	Number	Percent
1 I.C.H. & P.H.C. Lagos	9	16.7
2 Dept. PSM, U.C.H. Ibadan	9	16.7
3 U.B.T.H. Ekpoma, Benin	3	5.6
4 University of Nigeria Teaching Hospital, Enugu	8	14.8
5 University of Ife	3	5.5
6 A.B.U. Zaria	6	11.1
7 University of Calabar	2	3.7
8 University of Ilorin	8	14.8
9 School of Health Teaching, Joa	6	11.1
<b>TOTAL</b>	<b>54</b>	<b>100.0</b>



Table 52. Number And Percent CEOs Responses To Adequacy Of Training In Each Curriculum Unit And Overall

Responses	Unit 1 General Health Care	Unit 2 Personal Health Care	Unit 3 Organization & Management	Overall
Very Good	43 (79.63%)	38 (70.37%)	27 (50%)	49 (90.74%)
Good	11 (20.37%)	16 (29.63%)	19 (35.19%)	3 (5.56%)
Adequate	-	-	8 (14.81%)	2 (3.70%)
<b>TOTAL</b>	<b>54 (100%)</b>	<b>54 (100.0%)</b>	<b>54 (100.0%)</b>	<b>54 (100.0%)</b>

Table 53. Number and Percent CHOs Responses To Grading Of Practical Experience In Each Curriculum Unit

Responses	General Health Care	Personal Health Care	Organization & Management
Very Good	34 (62.9%)	31 (57.4%)	21 (38.9%)
Good	18 (33.3%)	20 (37.0%)	27 (50.0%)
Adequate	2 (3.8%)	3 (5.6%)	6 (11.1%)
<b>T O T A L</b>	<b>54(100.0)</b>	<b>54(100.0)</b>	<b>54(100.0)</b>

Table 54. Number And Percent CBOs Responses For More Training In Theoretical And Practical Experience In Each Unit Of The Curriculum

Responses	Unit 1		Unit 2		Unit 3	
	Theory	Practical	Theory	Practical	Theory	Practical
Require	12 (22.2%)	24 (44.4%)	10 (18.5%)	24 (44.4%)	16 (29.6%)	32 (59.3%)
More Training	42 (77.8%)	30 (55.6%)	44 (81.5%)	30 (55.6%)	38 (70.4%)	22 (40.7%)

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Table 55 presents distribution of CHOs at the time of the survey by the number of years of professional experience they had had at their various places of work in the clinical settings. CHOs with 1-2 years of professional experience and those with more than 2 years were more in numbers (22 and 21 respectively) while CHOs with less than one year were fewer in number, 11. This indicates that approximately 80% of CHOs had had more than one year of professional experience at their present places of work.

Table 56 presents detailed indicated responses given by CHOs about the extent of problems they were encountering in the course of performing their jobs at clinical settings.

Thirty-nine CHOs (72.2%) admitted they were having problems, while 15 CHOs reported they were not. Furthermore, this table gave a summary of various problems CHOs listed in their questionnaires.

Thirty-four CHOs reported that "resource constraints" was their problem, 5 CHOs expressed that it was not a problem. Fifteen CHOs did not

respond. Four CHOs reported that "uncooperative directors" were their problem, 35 CHOs did not consider these officers as their problem. Thirteen CHOs stated that lack of personnel and transport were their problems, 26 CHOs did not feel so, while 15 CHOs failed to respond to the question.

Finally, 24 CHOs reported that lack of incentives and motivation were their problem, while 15 CHOs did not express this opinion and another 15 CHOs did not respond to the question.

In order to identify the relationship between acquisition of necessary skills and knowledge at institutions and effective application of the acquired skills and knowledge in the practice area, CHOs were asked whether they were able to apply effectively all skills and knowledge at the clinical settings.

Table 57 revealed that 23 CHOs (42.59%) reported they were not able to apply all skills and knowledge effectively while 31 CHOs (57.41%) stated they were able to apply all skills and knowledge effectively at the clinical settings.

Table 58 shows that 32 CHOs (59.3%) reported that drugs and vaccine were available for less than 6 months of the year, while 22 CHOs (40.7%) reported drugs vaccine were available after this period.

Table 59 shows that only (44.4%) reported that equipment were available and in good order while (55.6%) reported that equipment were not available at clinical settings. In summary, findings obtained among sub-set of CHOs were not significantly different from those of the larger group. The views expressed about adequacy of training, the need for practical experience and above all the problem of lack of resources in the practice area were similar.

Table 55. Number And Percent Of CBOs Distribution By Years Of Experience

Years of Experience	Number	Percent
< 1 year	11	20.37
1-2 years	22	40.74
> 2 years	21	38.89
TOTAL	54	100.0

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Table 56. Number And Percent of CEOs Responses To The Extent Of Problems They Were Encountering In Job Performance

N = 54

Problems	Responses	Number	Percent
General	Yes	39	72.2
	No	15	27.8
Resource Constraints	Yes	34	63.0
	No	5	9.2
	No response	15	27.8
Uncooperative Director	Yes	4	7.4
	No	35	64.8
	No response	15	27.8
Uncooperative Ministry	Yes	8	14.8
	No	31	57.4
	No response	15	27.8
Lack of Personnel Transport, etc.	Yes	13	24.1
	No	26	48.1
	No response	15	27.8
Lack of Incentives	Yes	24	44.4
	No	15	27.8
	No response	15	27.8



Table 57. Number And Percent CHO Responses Indicating Opportunity To Apply All Skills And Knowledge At Clinical Setting

Responses	Number	Percent
Yes	31	57.41
No	23	42.59
TOTAL	54	100.0

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Table 58. CHOs Responses Indicating Duration of Availability of Drugs/Vaccine At Clinical Settings During The Year

Duration of Availability	Number	Percent
< 6 Months	32	(59.3%)
≥ 6 Months	22	(40.7%)
TOTAL		54 (100.0%)

Table 59. Number And Percent CHOs Responses To Availability Of Equipment At Clinical Settings

Availability of Equipment	Number	Percent
Available	24	(44.48)
Not available	30	(55.68)
TOTAL	54	(100.08)

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## 6.9 Description Of Work Sampling Observations Of Sample Of CHOs Activities At Health Facility Settings

### Introduction

In this section, the work sampling observation of the 54 randomly selected CHOs are described.

The work sampling and task analyses of CHOs at health facility settings provided information about their performance that was not available from any other source.

Since the CHOs were invariably observed for their entire working days, and since each observation represents a (2) two minute interval, the total time spent per working day can be calculated.

In this study, CHOs functions were classified into four categories in order that they may correspond with CHOs job descriptions and roles as written in the curriculum.

1. Clinical functions are composed of all maternal and child health core activities. Services rendered included curative functions to ill patients. Full patients' history were regularly obtained, physical, examinations performed, diagnoses of illnesses as carried out according to the standing orders, treatment and advice with necessary explanations were

given to patients.

2. Educational functions were provided to individuals or groups while rendering various services such as treatment of the ill, immunization of children, and at infant welfare, antenatal, postnatal and family planning clinics. In addition health education classes were conducted on various topics including environmental hygiene, nutrition and general health care. For descriptive purposes, in this study, all the above functions are referred to as "Direct Services".

3. Administrative Functions are vital aspect of CHO's expected role as the team leader. Functions performed included activities such as supervision of the health centre to ensure smooth day-to-day running of services. In general, maintenance, ordering of drugs, equipments and transports were included among these functions. Interaction with and coaching of lower cadres including planning for their professional advancement featured as an important

aspect of the administrative duties. Keeping of adequate records of all health centres activities is a vital and important aspect of CHOs' administrative duties. In this study, all CHOs' administrative duties are referred to as "Supportive Services".

4. Community functions are composed of all primary health care functions performed in the community with or without community support.

In order to appreciate a clear descriptive picture of the time and motion study (work sampling) the percentage of time spent in each of the categories are presented.

The total number of observations during the time and motion study was 15,397. Total days of observations were 2 days per CHO. On an average, each CHO was observed 265 times. Each CHO's number of observations were used as the denominator to calculate the percentage of the time CHOs spent in activities classified by place, contact, functions, and description of details of activities. The term "Away" referred to when a CHO was absent from the clinic such as having gone to the Ministry of Health or was on official assignments outside the clinic environment. Other terms used in this study included

"others" which indicated that when CHOs were not found at the clinics, but elsewhere within the clinic environment, they were still engaged in health duties. Finally the term "None" referred to all non-productive duties CHOs were engaged in such as having lunch, or conversing with other health professionals.

Percent Distribution of CHOs' Time Spent by Place

Table 60 shows that 87% of CHOs' time was spent at the clinics performing health duties. Approximately 1% of their time was spent performing community functions, 0.2% of their time was spent doing home visits. CHOs were observed to have spent 5% of their time doing "other" things, while 7% of their time was spent "away from the clinics". In conclusion, CHOs had spent a higher proportion of their time at the clinic compared with other places at the time of this survey.

Percent Distribution of CHOs' Time spent in

Activities by contact

Table 61 presents CHOs' percent time spent with various categories of patients. CHOs spent a larger proportion of their time with women followed

by pre-school children. In this table "nono" does not imply idleness but that CHOs were not in contact with patients.

### Distribution Of CHOs' Time By Major Functions

Table 62 presents full detail of CHOs percent distribution of time by major functions. Clinical functions accounted for 37%. Out of this, CHOs spent 27% in curative activities. This included patients presenting with ill health problems. CHOs were involved in taking history of ill patients; performing physical examinations, diagnosis of diseases, treatment of patients and giving advice. Approximately, 2% of CHOs' time was spent giving immunization. CHOs spent approximately 8% of the clinical time engaged in giving women health services such as ante-natal or family planning. 7% of CHOs time was spent in either group or individual health education.

Regarding administrative functions, CHOs were observed to spend a higher proportion of their time (46.1%) performing those compared with clinical functions. In general, the distribution of CHOs

time in administrative functions are as follows:



Twenty-two percent (22%) of CHOs' time was spent with staff personnel. They were available to all other staff as the team leader. Furthermore, CHOs' time was spent in teaching lower cadres which included clinic staff and other students in training such as the aides. Students from schools of health technology were also among the personnel supervised and taught by CHOs at the clinical settings. Continuing further, 6.3% of CHOs' time was spent in logistics. Maintenance, ordering, supply of drugs equipments and transport were the activities involved.

7.5% of CHOs' time was spent in supervision of clinics, this included seeing to the day-to-day smooth running of the clinic activities.

1.5% of CHOs' time was spent in group health activities where they interact with community leaders of the clinics. Such activities were father's club meetings, women in health association meetings, etc. This aspect is worth reporting because CHOs in many states were observed to utilize this area of their training extremely well, and to the maximum advantage. Definitive evidence of successful results such as community providing

Table 60. Percentage Distribution Of CBO's Time By Place

N = 54

---

Clinic	87
Community	1
Home	0.2
Away	7
Others	4.8
<b>TOTAL</b>	<b>100.0</b>

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Table 61. Percentage Distribution of CHOs' Time Spent In Activities By Type Of Contact

N = 54

Categories	Mean Percent
0-5 years	14.0
6-14 years	7.5
Women	23.0
Men	7.3
*None	48.2
<b>Total</b>	<b>100.0</b>

\* See text

Table 62. Distribution of CHOs' Time in Activities  
By Major Functions

	Mean Percent
<u>CLINICAL FUNCTIONS</u>	
Curative	27.4
Immunization	2.3
Injections	0.4
Nutrition	0.6
IWC/FP	1.1
Health Education	0.7
ANC	4.0
Post-natal	1.1
Sub- Total	37.6
<u>GROUP HEALTH EDUCATION</u>	
Sub - Total	6.6
<u>ADMINISTRATIVE FUNCTIONS</u>	
Personnel Support	22.0
Logistics	6.3
Supervision	7.5
Waiting	6.2
Transit	4.1
Sub - Total	46.1
<u>COMMUNITY ACTIVITIES</u>	
Group activities	1.5
Home visit	0.50
Sub - Total	2.0
<u>None</u>	7.7
Grand - Total	100.00

\*See text (p.265)

equipment, e.g. bedding, refrigerator, drugs and vaccines and even building health centres using community efforts were seen.

Table 63 presents percent distribution of total CHOs time by detail activities at the clinical settings.

Table 64 shows that 43.4% of CHO's time was spent performing direct services which involved history taking, physical examination, treatment and counselling patients.

48.7% of CHO's time was spent in supportive activities which included, management and organization, supervision of lower cadres, and general day-to-day smooth running of health facility setting including community functions. 7.7% of CHO's time was spent doing nothing.

In conclusion, of all activities observed, CHO's time distribution were as follows. Clinical functions accounted for 37%, this included health education, while administrative functions took 45%. Of the 37% of time spent in clinical functions, CHO's spent 27% in curative treatment. This result indicated that CHO's spent more time in curative functions than preventive functions. Furthermore, CHO's spent a substantial part of their time in administrative functions.

Table 63. Percent Distribution of Total CHOs\*  
Time By Detail Description Of Activities

	Mean Percent
Interview	12.9
Examination	14.6
Advice and Treatment	15.9
Record	20.9
Demonstration	15.0
Preparation	9.0
Personal	2.7
Staff Meetings	0.2
Community Activities	0.3
None	7.2
<b>TOTAL</b>	<b>100.0</b>

Table 64. Distribution Of CHOs' Time Spent In Detailed Direct And Supportive Services

Duration of Observation Period	Direct Service	Supportive Service	None	Total
9 am-1 pm 2 days	43.5	48.7	7.7	100

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## 6.10 Evolution Of CHO's Performance

One major focus of this study is to assess quality of performance of CHOs during indicated activities using checklists from CHO's curriculum. This will help to determine effectiveness of CHO's performance in relation to their training. Furthermore, it will highlight which factors enhance or impede CHO's performance.

The use of checklists to evaluate health workers is not new. For example, this concept was used as a descriptive study in Nopol by the Department of International Health, Johns Hopkins University, U.S.A. (Surket District Community Health Survey, Nopol 1978).

A major innovation presented here is the use of checklists to quantify CHO's performance. The reason was to determine effectiveness of selected skills and knowledge pertaining to their activities in the delivery of PHC in the Community.

First, mean scores in each of the ten tasks to measure CHO's performance was computed before grouping tasks into CHO's curriculum units and into an overall score.



Table 65 presents the detail characteristics of CBOs' performance in each task and overall. This table revealed low mean scores in the following tasks: history taking, physical examination and care of the handicapped. All these tasks are part of unit 2 in the CBOs curriculum (Personal Health Care).

Performance mean scores in all the other tasks were higher. It could be concluded from this that CBOs' performance was best in unit 1 (General Health Care) and better in unit 3 (Organization and Management) while performance in unit 2 lagged behind these two units.

Having obtained results of CBOs' observed rating, it would be appropriate to examine the correlation between CBOs' self-rating and observed rating scores, since this is one of the stated hypotheses of the study. From the descriptive analysis and identification of the correlates to these variables, it would be possible to understand nature of CBOs' self-perceived competence, i.e. how they believed they could perform.

Table 65. CHO Performance Mean Score In Each Task\*  
(Maximum = 3)

No.	Tasks	Mean	S.D.	N = 54
1	History taking	1.74	0.17	
2	Physical examination	1.94	0.16	
3	Assess nutritional status	2.12	0.31	
4	Conduct health education	2.5	0.32	
5	Perform blood test	2.57	0.45	
6	Report and record clinic activities	2.16	0.38	
7	Communicable disease control	2.16	0.38	
8	Care of the handicapped	1.09	0.14	
9	Care of lower cadres	2.45	0.27	
10	Maintain drugs (logistics)	2.51	0.19	

\*Determined By Using Checklist From CHO Curriculum

### 6.11 Correlation Between CHOs' Self-Perceived Rating and Observed Scores

The description of CHOs' responses to their self-perceived competence measured by self-rating 16 tasks showed, as expected that CHOs persistently rated themselves high in many of the tasks.

Table 66 shows CHOs' self-rating characteristic scores in each task. The data shows that many CHOs' self-rating scores for most tasks were in the highest category for approximately 80% of the responders. The variance tends toward zero. This lack of variability made further bivariate analysis of causes of variation not feasible.

However, there were some four tasks which CHOs rated less than others (see Table 67).

CHOs' self-perceived competence does not show enough variation to be used as a dependent variable for hypothesis testing. While it may sometimes be desirable to wish to utilize this kind of subjective rating for hypothesis-testing in research study, it is important to understand the limitation involved with this type of method in health services research. The author, however, looked for correlation between CHOs' self-perceived competence and observed rating.

Tables 68 and 69 show lack of correlation between the observed and self-rating tasks for any compared except observed task #6 which showed a positive correlation of .378. A positive significant correlation of .31 existed in the overall scores.

Caution is needed in the interpretation of this result. However, it could be assumed that the instruments are sensitive and useful in measuring the competence of CHOs to perform their duty, based on the positive correlation between the two scores overall.

While it is important to look for correlation between the two variables, there are some important points to emphasize:

- a. Different instruments were used to obtain the scores.
- b. Observed scores have many sub-tasks while self-perceived competence scores are discrete items with no sub-tasks.
- c. Many tasks, i.e. observed and self-perceived tasks are not the same - some are not comparable.

Table 66. CHOs Competence: Comparison of Self-rating Scores

N = 384

Tasks	% Self-rated "very well"	Mean (Max = 3)	SD
History Taking	81.8	2.8	0.5
Physical Examination	78.9	2.8	0.5
Conduct Health Education	77.6	2.5	0.7
Screen Nutritional Problems	66.1	2.8	0.5
Weigh Patients	86.5	2.8	0.5
Conduct Antenatal Care	58.9	2.4	0.8
Estimate Haemoglobin	54.4	2.4	0.8
Give Immunization	80.2	2.8	0.5
Use Standing Order Correctly	78.4	2.7	0.6
Record and Report Clinic Activities	76.1	2.7	0.6
Evaluate Clinic Activities	62.2	2.71	0.6
Supervision of Clinic Activities	77.3	2.7	0.6
Teach Lower Cadres	73.2	2.7	0.6
Plan for Lower Cadres	67.2	2.6	0.7
Plan for BHSS	53.4	2.4	0.8
Community Activities	52.6	2.4	0.8

Table 67. Tasks Which CHOs Rated Less Than Others In CHO Self-Perceived Competence

Tasks	SELF - RATINGS					
	Percent "Very Well"	N	Percent "Well"	N	Percent "Adequate"	N
Conduct ANC	58.9	226	32.6	125	8	33
Estimate Haemoglobin	54.4	209	34.9	134	10.6	41
Plan for BHSS	53.4	205	39.6	152	7	27
Community Activities	52.6	202	38.8	149	8.6	33

Table 68. List Of CHOs' Observed And Self-Rating Tasks

Task No.	Observed Task	Task No.	Self-Perceived Tasks
1	History Taking	1	History Taking
2	Physical Examination	2	Physical Examination
3	Assess Nutritional Status	3	Conduct Health Education
4	Conduct Health Education	4	Screen Nutritional Problems
5	Perform Haemoglobin Test	5	Weigh Patient
6	Report and Record Clinic Activities	6	Conduct Antenatal Clinic
7	Communicable Disease Control	7	Perform Haemoglobin Test
8	Care of Handicapped	8	Give Immunization
9	Plan for Lower Cadres	9	Use Standard Order Correctly
10	Maintain Drugs and Equipment	10	Recording and Reporting Clinic Activities
		11	Evaluate Clinic Activities
		12	Supervision
		13	Teach Lower Cadres
		14	Plan for Lower Cadres
		15	Plan for BISS
		16	Community Activities

Table 69. Correlation Between Observed And CEOs' Self-Rating Scores for various tasks

Observed Tasks*	Self-Rated Tasks *	Correlation	P. Value	Sig. and Direction
1	1	0.155	0.26	N.S.
2	2 & 6	-0.004	0.75	N.S.
3	4 & 5	0.26	0.06	N.S.
4	3	-0.116	0.40	N.S.
5	7	0.146	0.38	N.S.
6	10 & 11	0.378	0.05	Sig. Positive
7				
8				
9				
10	12,13,15,16	0.074	0.59	N.S.
Overall		0.31	0.02	Sig. Positive

please see table 68 for description of the various tasks. Self-Rated tasks have been appropriately combined for purpose of comparison with observed tasks.



Most importantly, the lack of variation in many of the CHO's self-perceived competence which made the variable inadequate to be utilized as a dependent variable in this study suggest that caution needs to be exercised in the use of self-rating by questionnaire for future health service research of this nature since they may not be reliable.

In order that 10 tasks used to measure CHO performance should correspond with CHO curriculum units; the tasks were regrouped and combined. Table 70 shows detail of tasks regrouped to correspond with CHO's curriculum units.

Table 71 shows performance mean scores of CHOs in the 3 curriculum units. Performance mean score in unit 3 was the highest, followed by unit 1. In unit 2 we observed that CHO's performance mean score was low.

The reasons why CHO's performance mean score was low in unit 2 were as follows; while a majority of them were good in creating rapport with patients, many of them in taking history did not conform to asking patients specific questions concerning medication patients were taking prior to attending clinics, or history of consumption of alcohol or tobacco.

Regarding physical examination, many CHOs were observed not to examine systematically

some parts of the body as stated in their standing orders such as face, legs and breasts, especially of adult patients. Few patients were examined on a couch even when available. CHOs however have performed the use of stethoscope to auscultate patients' chest very well as stipulated in the standing order. Patients' blood pressure and vital signs were often measured and recorded respectively. CHOs were in the habit of explaining treatment to patients.

Core of the handicapped patients received little or no attention from CHOs. They expressed that handicapped patients were never seen at the clinics, while those who saw handicapped patients did not make a follow-up effort neither were records kept. This was observed to be uniform in all the states visited.

Other issues of concern was the use of arm circumference bands. Almost all CHOs were observed not to measure arm circumference among children. The reason for this was observed to be related to lack of arm circumference tape in many clinics. Also, performance of this task was assigned to lower cadres who weighed patients in many clinics. However, one would anticipate that CHOs should check adequacy of recording of findings in the patients' records to ensure that patients would be given appropriate advice and treatment.

In unit 1 (General Health Care) performance mean score was higher than in unit 2 because all CBOs performed health education functions very well. Where CBOs were not observed to personally perform this task but assigned it to a lower cadre it was done under supervision.

Estimation of haemoglobin was another task which was carefully handled because in many health centers, equipment (Haemoglobinometer or tail quist) were not available. CBOs therefore were not rated for the technical aspect of the task rather, other criteria such as being aware to check for anemia in a pregnant woman or among children at specific periods stated in the job description and the standing order were rated.

Reporting and recording clinic activities, and general surveillance of the community information system was another task not adequately performed by CBOs. Many clinic records were scanty with very limited information. Records showing no of births, deaths and communicable diseases were rather inadequate. Similarly, many CBOs were aware only of areas being served but did not know the size of the target population.

In unit 3 (Organization and Management) CHOs performed tasks very well. The smooth running of clinics and the supervision of lower cadres were well performed.

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**Table 70. Observed Tasks Regrouped To Correspond With CBO Curriculum Unit**

Curriculum Unit	Name	*Tasks
1	General Health Care	4, 5, 6, 7
2	Personal Health Care	1, 2, 3, 8
3	Organization and Management	9 and 10

\*See table 65 for contents

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Table 71. Observed Performance Mean Score In Each Curriculum Unit And Overall

Units	Mean	S.D.
1	2.34	0.26
2	1.78	0.16
3	2.50	0.17
Overall	2.15	0.15

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6.17

### Comparison of CHO performance with Independent Variables

In this section, personal characteristics of CHOs are analyzed and results presented. Observed performance was compared in each group with the following variables:

'professional background', 'years of experience', 'perceived adequacy of training' including their attitudes towards responses for more training.

The null hypothesis is that the mean score for observed rating will be the same at different level.

Table 72 shows scores within the professional groups for each unit and overall. Public Health Nurses had significantly higher scores than Registered Nurses/Community Midwives and Higher Rural Superintendent overall ( $p < 0.01$ ) and in the first and third units ( $p < 0.04$  and  $p < 0.05$ ) respectively. There were no significant differences in the performance mean scores of Registered Nurses/Community Midwives and Higher Rural Superintendents. From this result, it could be inferred that Public Health Nurses' performance might be due to the initial higher educational level for admission and training plus the extra one year

in Public Health received, and the fact that they had more community-based activities prior to the CHO's training course.

Table 73 shows that years of experience is positively related to CHOs overall performance from analysis of variance test ( $F = 5.07$ ;  $p < 0.02$ ). Furthermore, there were higher mean scores among CHOs with 3 years of professional experience compared with CHOs who had had less than 1 year and 1-2 years of experience respectively in each CHO curriculum unit. However it was observed in unit 2 that CHOs' performance mean scores were not different regardless of years of experience. Unit 2 tasks are composed of activities directly involving patients such as taking history, and performing physical examinations. From the overall result which was positive it could be concluded that as years of experience increases, performance increases.

Table 74 shows that the overall score tended to be higher for those CHOs reporting higher adequacy of training. Simple regression result shows a significant association between adequacy of training and CHOs' overall performance ( $p = < 0.05$ ). Similar



results were obtained in units 1 and 3 of CHOs performance means score. Significant association with CHOs' responses to adequacy of training was obtained as indicated previously. With this result, CHOs' perceived adequacy of training was confirmed. It could however be mentioned that responses given by CHOs to adequacy of training in unit 2 were not found to be associated with CHOs performance mean score. This may suggest that while CHOs found training to be adequate, their performance in tasks belonging to unit 2 of CHOs' curriculum was not as good compared with units 1 and 3.

Table 75 presents mean scores of CHOs according to whether or not they expressed need for more theoretical training in their course curriculum. Forty three CHOs (80%) with mean of 0.18 stated they did not feel the need for more theoretical training. Eleven CHOs (20%) mean 0.11 felt such a need. However, the mean scores for the 2 groups were not significantly different.

Table 72. Comparison Of Performance Mean Score With Professional Background

N = 54

Units	PNB (11)	HRS (19)	Nurses and Others (24)	S.D.	P. Value
1	2.5	2.3	2.3	0.25	0.04
2	1.9	1.8	1.8	0.16	0.16
3	2.6	2.3	2.4	0.16	0.05
Overall	2.3	2.1	2.1	0.14	0.01

F = 4.85; P = <.051

Table 73. Comparison Of Performance Mean Score With Years Of Experience

N = 54

Curriculum Unit No.	1 Year (11)	2 Years (22)	3 Years (21)	S.D.	P. Value
Unit 1	2.2	2.3	2.4	0.26	0.45
Unit 2	1.7	1.8	1.9	0.15	0.002
Unit 3	2.3	2.4	2.5	0.17	0.65
Overall Curriculum	2.1	2.1	2.3	0.15	0.04

F = 5.07; P < 0.02

Table 74. Comparison Of CHO Performance With Responses To Adequacy Of Training In Each Unit Of CBO Curriculum And Overall

Curriculum Units	Responses	N	Mean	S.D.	P
Unit 1	Yes	43	2.50	0.19	0.051
	No	11	2.10		
Unit 2	Yes	38	1.8	0.16	0.61
	No	16	1.7		
Unit 3	Yes	27	2.51	0.16	0.052
	No	27	2.31		
Overall	Yes	42	2.41	0.15	0.05
	No	12	2.1		

F = 4.04; P = < 0.05

Table 75. Comparison Of CEOs Performance With Responses To Whether They Expressed Need For More Theoretical Training

Need For More Theory	Frequencies	Mean Score	S.D	P
Yes	11	2.13	0.11	0.75
No	43	2.15	0.18	

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Table 76 shows that those CHOs who expressed desire for more practical training, 24 (44.4%) had higher mean scores than 30 CHOs (55.6%) who reported they did not need more practical training. The differences were statistically significant ( $p = 0.04$ ). From this result, it could be inferred that CHOs responses to the need for more practical training is related to their perceived needs.

Table 77 shows that CHOs' performance mean scores were not different among those who reported that drugs were available at the clinical settings for less than 6 months compared with those responders who reported availability of drugs for longer than 6 months.

Table 78 shows that differences were not significant among CHOs' performance mean scores of those who reported that vaccines were available for less than 6 months at the clinical settings (51.9%) with mean of 2.16, compared with those (48.1%) with a mean of 2.13 who reported that vaccines were available for longer than this period.

Table 79 shows mean scores of CHOs according to whether equipments were present and in order; present not in order or not present at all. Twenty five CHOs (46.3%) reported that equipments were present and in order, while 29 CHOs (53.7%) reported that equipment were not present or not in good order at clinical setting. The mean scores, however, were not different. From these results, it could be assumed that resource constraints are recognized as problems for many CHOs, but not associated with observed performance.

In conclusion, one would assume that low or, lack of resources would be positively related to CHOs performance at the clinical settings since these items play a significant role in the clinical arena both for patients and CHOs. However the author observed that CHOs utilized various strategies during the field survey to reduce the effect of lack of resources which should have affected their performance - CHOs were observed to use other skills and knowledge acquired in the training to solve some of their problems. Chief among these involved the use of community participation. Many CHOs were able to get members in the community to donate required essential resources to enable them perform their duties.

Table 76. Comparison Of CBOs Performance with Their Responses To Whether They Expressed Need For More Practical Experience

Need For More Practical	Frequencies	Mean Score	S.D.	P	Direction
Yes	24	2.4	0.19	0.04	Sig.
No	30	2.14	0.15		

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Table 77. Comparison Of CHOs Performance With Responses To Availability Of Drugs At Clinical Setting

N = 54

Duration	N	Mean	S.D.
< 6 Months	33	2.14	0.14
≥ 6 Months	21	2.15	.16

Table 78. Comparison of CHOs Performance with Responses To Availability Of Vaccine

N = 54

Duration	N	Mean	S.O.	P
< 6 Months	28	2.16	.17	
≥ 6 Months	26	2.13	.15	0.24

Table 79 Comparison of CHOs Performance with Responses as to whether equipments were present and in order or not present/not in order in Clinical Setting

N = 54

Responses	N	Mean	S.D.	P
Yes	25	2.14	0.13	
No	29	2.15	0.16	0.74

Other skills and knowledge diligently displayed during the field survey included use of health education strategies as preventive measures. For example CHOs were observed to conduct daily health education classes for mothers. During such classes, patients were taught the art of disease prevention. Typical examples were; teaching mothers good sources of well balanced diets which would prevent malnutrition, and food hygiene to prevent food poisoning. Environmental sanitation with major emphasis in the destruction of mosquitoes which will prevent malaria infection was also often taught. Other measures included use to send patients to hospitals where those items were available.

All the above factors were included in CHO assessment checklist observation forms. Each CHO was carefully rated, and stringent efforts were made to avoid bias.

Regarding institutional variables used in this study as measures of CHO's performance at clinical settings, these variables were from the original data obtained from institutions. They however appeared not to be sensitive as measures for CHO's performance. The terms "low hours" and "high hours" refer to the data obtained in questionnaires from institutions in this study.

Table 80 presents full details of different components of CHOs training programme.

Hours assigned to theoretical training ranged from 140 by University of Benin Teaching Hospital, Ekpomo, Bendel State, to 350 by University of Ilorin Teaching Hospital, Kwara State. Similarly, number of hours assigned to practical training also ranged from 370 by University of Benin Teaching Hospital, Bendel State to 620 by Institute of Child Health, Lagos; School of Hygiene, Ibadan and University of Ife respectively.

Number of full-time faculty members range from none at 2 institutions - Universities of Colabor and Enugu to 4 at both Institute of Child Health, Lagos and University of Ilorin respectively.

Table 81 shows that there was no statistically significant relationship between the mean scores of CHOs and the number of hours devoted to either theoretical or practical training at the various institutions where they were trained.

Table 82 shows no significant difference in the performance mean scores among CHOs who attended institutions with less than 2 faculty members compared with 4 in unit 2 and 3 respectively. Hours assigned

in the teaching of CHOs both in theoretical and practical training and the number of teachers teaching are important factors which should have influence on CHOs' performance at clinical settings. The probable explanation might be that perhaps institutions which assigned less time to teaching with fewer number of teachers are in fact effective in other aspect not identified in the completeness of the training programme for CHOs.

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Table 80. Detailed Information For Different Components Of CBO Training Programme

Institutions	No. Hours for Theory	No. Hours for Practical	No. Full-Time Teachers
ICB, Lagos	310	620	4
School of Hygiene OCH, Ibadan	310	620	3
University of Ife	310	620	2
UBTH Benin Ekpona	160	370	1
University of Nigeria T.B. Enugu	205	410	0
University of Calabar	205	410	0
ABO, Zaria	205	410	3
UITH Ilorin	350	600	4
School of Tech. Jos	205	410	2

Table 81. Comparison Of Performance With Hours Assigned To Theory And Practical In Institutions

N = 54

Theory	Practical	No. Inst.	No. CHO	Unit 1	Unit 2	Unit 3	S.D.	Overall
160	370	1	8	2.3	1.7	2.5	0.25	2.1
205	401	4	17	2.3	1.7	2.4	0.15	2.1
301	620	3	21	2.3	1.8	2.5	0.16	2.2
350	600	1	8	2.4	1.7	2.5	0.15	2.1

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Table 82. Comparison Of Performance With Number Of Full-time Tutors Teaching In Institutions CBOs Attended

Full-Time Tutors	No. Of CBOs	Unit 1	Unit 2	Unit 3	S.D.	Overall
0	9	2.3	1.8	2.5	0.25	2.1
1	9	2.3	1.7	2.5	0.16	2.1
2	9	2.2	1.8	2.5	0.16	2.1
3	11	2.5	1.8	2.5	0.15	2.2
4	16	2.3	1.8	2.5	0.16	2.1
<b>TOTAL</b>	<b>54</b>	<b>p 0.53</b>	<b>p 0.52</b>	<b>p 0.76</b>		<b>p 0.52</b>

## CHAPTER VII

### DISCUSSION AND IMPLICATIONS

#### 7.1 Introduction

The purpose of this study has been primarily to examine the activities of CHOs in the delivery of primary care in Nigeria in order to determine factors which enhance or impede their performance. Certain methodological questions were also of interest. This study was also undertaken in an objective fashion partly because a review of the literature indicated that the national health system generally lacked empirical studies for performance assessment about non-physician health providers.

In this chapter, the discussion will begin with re-examination of study objectives in Chapter I as a frame of reference.

1. The value of performance measures used in the study will be addressed.
2. Factors identified to affect performance of CHOs will be summarized.
3. Continuing education and organizational support for CHOs will be discussed.

4. The implications of the study for further research and policy will be addressed.

The realization and implementation of necessary action to solve health problems in the community have become integral parts of the health system in all countries. The extent to which objectives of a health system or programme have been achieved however requires systematic evaluation (WHO, Series 5 and 6 1981). Non-physician workers constitute a high proportion of the health manpower in developing countries. Therefore in such countries adequate evaluation of the health system requires careful evaluation of the training curricula and job performance of these cadres of health workers.

Very limited studies have been carried out to date in Nigeria to justify methods and effectiveness of community focused health programmes, especially few have addressed issues of training, functions, productivity, resources and national objectives, (i.e. studies which linked training with job performance taking the environmental situation into consideration). There has been much tendency towards utilizing subjective impressions rather than objective evaluation and statistical appraisal which are necessary for justification of expenditure and direction of national objectives by the

government. This is crucial when it is realized that health has to compete for the nation's financial and other resources with other equally demanding sectors such as agriculture, industry, education, defense, transport, etc. Moreover, such data are required by government, organizations and institutions to avoid waste of resources, and to enhance increased progress and improvement in the existing programmes. Because of the dearth of essential data, governments, and health planners have often relied on trial and error programmes and sometimes new methods and ideas are added to existing ones without much effort to assess the value of existing programmes.

Reasons responsible for this are: (a) the assumption that the need for health services is a "Datum" therefore there was no need for health personnel and health planners to prove the value of the services to the government or sponsoring agencies. (b) Appropriate research tools and techniques for evaluation have been lacking.

Findings from this study helped to validate the instruments designed to assess CBOs performance. Of significant importance were the results which showed no difference among CBOs when they were

observed "Incognito" and under "Non-concealment" conditions (Tables 14-17).

From this, it could be concluded that the effect of being observed did not influence CHOs performance in the Somolu setting in Lagos. It also demonstrated that subjectivity of performance assessment can also be minimized. This verification procedure was not repeated in other settings because of logistic problems, but it is reassuring that observer effect at Somolu was minimal demonstrating the possibility of the methods of this study being valid in other settings.

This experimental study has demonstrated the applicability of the use of some components of functional analysis models to measure quality of CHOs tasks performance in keeping with the objectives of the curriculum and job description. The functional analysis model, part of which was used for CHOs performance assessment had been found useful. It was possible to break down tasks related to specific functions into units for observation. These functions served as a link to tasks identified in the CHOs training programme permitting analysis of the observational data in units related to training. The critical test of

any measure is the extent to which it has explanatory power in its relation with other variables. An instrument is valid if it does what it is intended to do. The functional analysis model has been used in India in part to observe activities of health workers in peripheral clinics and on the field to determine their training needs and to write their job requirements (Parker, et. al., 1972; Department of International Health, Surkhet District Community Survey, 1978).

In Nigeria the work-sampling method had been employed to measure volume of staff activities by functions of Health centers (Abelunde, et. al., (In Press).

The present study however has used some components of functional analysis to assess CHO performance in a qualitative fashion to determine their effectiveness related to training, facilities in the practice area and personal factors. The achievement of this objective was due to availability of competency-based curriculum with instructional objectives and CHOs job description.

Other findings relating to the training of CHOs are those obtained from the 9 institutions. CHOs training programmes are to be consistent with the health policy of the country. The training programmes at these institutions have been established in the departments of Community Health; Faculty of Health Sciences and Primary Health Care, respectively. They are to train some member of health personnel capable of immediately meeting the needs of the nation.

Each institute was intended to train CHOs for broad preventive, curative, educational, health promotional and rehabilitative comprehensive health functions. Major emphasis was to link learned skill, knowledge and attitude with field practice in peripheral structures - (health centers, clinics and dispensaries). The training is to cover the full array of health services: taking family history, performing physical examination, MCH, prevention of diseases (Health education; vaccination, laboratory tests, sanitation,

epidemiological survey with emphasis on community participation). The institutions were also to collaborate with other intersectorial organizations concerned with national economic development, e.g. agriculture, engineers and accountants in teaching CHOs.

The findings in the study revealed that within 5 years of CHOs training programme, the institutions have produced a total of 779 CHOs, i.e. from 1979-1983. Institutions have trained for each state according to specific guidelines. Tables 21 and 22 reveal full detail of the role of training institution and the number of CHOs sponsored by their state of origin. An attempt has also been made to compute CHOs per population. Beyond this, the data obtained from the institutions did not allow for description other than variability in the number of hours assigned to theoretical and practical experiences throughout each session of CHOs training programme and the number of full and part-time teachers available to teach CHOs. These are discussed in the specific findings of the study.



Interpretation of these descriptive findings should therefore be made with caution. Empirical observations show that each institution liaise with the Primary Health Care Unit of the Federal Ministry of Health and actively participates in all issues relating to the policy and the training of CHOs. Owing to inadequate data, this study will not address completeness of training programme such as, methods used by members of the faculty for teaching CHOs, and facilities available for teaching. All institutions except two reported they achieved the objectives of their training institutions. However, all institutions reported that the major objective for training CHOs was to comply with the Federal Ministry of Health's regulation to train CHOs for all states. The University of Jos and Ahmadu Bello University, Zaria, respectively, reported they partially achieved the objective of their training programme. Lack of funds and other resource constraints were responsible for partial achievement of the training objective. Overall the institutions responsible for training CHOs have been found to be good agents in the training of this cadre. They are able to draw on University resources, e.g. teaching staff, transport, and other logistics

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which other institutions not well established might not be able to provide to meet the needs of CHOs training.

However, from personal impression, emphasis should be concentrated more on the practical and field experience rather than didactic teaching in order that the training be relevant to the needs of the nation.

## 7.2 Work-Sampling (Time and Motion Study)

One of the objectives of this study was to identify tasks and related functions and activities actually performed by CHOs in health centers. From the analysis of the information gathered, the present study was able to describe the volume of activities CHOs were performing in various categories of functions during normal working days in order to determine their productivity in primary health care.

Productivity is measured as the ratio of volume of services to total staff hours spent. The average productivity for each type of service offered by CHOs in health centers during the field survey for 2 days had been presented in tables 60-64.

43.4% of CHOs time was spent with direct services, while 48.9% was spent in supportive services.

An average of 37% of CHOs time was spent in clinical functions out of which 27.4% of CHOs time was involved in curative functions. Similarly, regarding administrative functions, a larger percentage, 46.6% of CHOs time was spent on these activities. This suggests that administrative functions performed at the clinical settings by CHOs outweighed time spent in clinical functions.

With these results, the conclusion drawn was that performance of CHOs as the team leaders of the non-physician health providers in the delivery of primary health care have been adequate. The implication to the Federal Government should be that of satisfaction that CHOs are more involved in administrative duties to ensure general supervision of the rural duties. As a matter of fact,

in CHOs job description they are expected to perform more administrative functions to ensure the smooth daily running of clinic activities, therefore it was not surprising that the percent of CHOs activities was higher in administrative functions.

Community functions accounted for only 2% of CHOs time. These tasks included meeting with the community to perform mass immunizations against the communicable diseases such as cholera, measles or tuberculosis and meeting with community leaders to discuss clinic problems which were evidently fruitful. Many clinics were partly supported by community donations of equipment; refrigerators, electric generator plants, transport, and drugs are examples of donations given to health centers through community efforts. For instance, in Kano State, a philanthropic organization donated land for the purpose of building health centers. In Bendel State the Community was in the process of building a health center using community efforts at the time of the field survey. In Oyo, Maiduguri and Plateau States, the communities have donated generator plants for health centers while in Kwara State the community was planning to purchase a

vehicle which CHOs in that community needed for giving frequent treatment to patients in for more rural areas suffering from dracunculosis (guinea worm). Although performance of community activities by CHOs as variable among states within the period of the field survey, the impression of the author was that this aspect of function was adequate.

In summary, Tables 63 and 64 show details of percent distributions of time CHOs were found performing various activities at the clinical setting. Caution is however needed when interpreting data from work-sampling because variation such as seasonal and organizational conditions in the clinics are examples of factors which could affect findings obtained. For example, this study was carried out during the dry season. It could alter the profile of CHOs' volume of activities and the percent distribution of CHOs time in various functions if the study was conducted during the rainy season. It is the author's impression that availability of resources, especially of drugs and vaccines affect CHOs' volume of activities and percent distribution of time.

At the time of this survey, health centers where drugs and vaccines were available had more

patients and consequently this had increased CHOs volume of activities performed in direct services while CHOs in health centers which lacked these resources had a decline in the volume of activities relating to direct services. Percent distribution of time spent in supportive services, e.g. office work and waiting were higher than for those CHOs who had resources. The longer, the period when resources were not available, the less the volume of activities of CHOs in direct services. Seniseye (1979) identified that, among many factors, availability of medication and organization of services affect utilization of clinic services by patients. She also cited staff attitudes to patients as another important factor. In this survey the impression gained was that of frustration and low morale among CHOs where lack of facilities was problems at health centers. Therefore one could expect conflict between patients and staff when patients' ultimate goal is provision of medication as part of treatment by staff at the end of essential resources at the clinical settings would lack of essential resources at the clinical settings would be that CHOs will be involved more in curative services than preventive because patients are not likely to report for clinic utilization until they become ill.

### 7.3 CHOs Self-Perceived Competence

Self-perceived competence was one of the concepts of interest in this study. This was an attempt to identify how the CHOs perceived their own abilities in the clinical settings as measured by 16 tasks which they had been taught and which are frequently performed at health centers to solve health problems. These tasks were selected to cover the range of skills related to interpersonal practical aspects of care and to competence in skills, knowledge and attitudes expected of CHOs towards their role and responsibilities. These tasks were analyzed separately in order to have a good insight into the scores of each task as rated by CHOs.

Results of CHOs' rating of the 16 tasks (Table 66) revealed that CHOs perceived their performance as very good in almost all the tasks. 80% of the responses rated most tasks high. There was no task that CHOs rated that they could perform poorly or they could not perform at all. Even in the four tasks which CHOs rated less than others the average score was still high. Combining those four tasks was not done because



each task cannot represent any of the units of CHO curriculum. Furthermore because CHOs persistently rated their abilities high in self-perceived tasks, further analysis would be of limited value in the remaining tasks in this study (see table 67). Subjective rating is prone to over- or under-rating. Hart (1976) reported in his study that health workers persistently rated their abilities high without significant change.

Parker, et. al. Dept. of International Health Surkhet District Community Survey (1979) concluded that health workers in Nepal were found to have over-rated their abilities in the performance of primary health tasks. In the present study, the evidence from the objective ratings suggests that CHOs self-perceived competence ratings tend towards over-rating.

Quite possibly many might not have taken environmental factors such as lack of resources into consideration when rating their competence. However self-perceived competence scores in this study did not show enough variation to be used

Therefore, based

each task cannot represent any of the units of CHO curriculum. Furthermore because CHOs persistently rated their abilities high in self-perceived tasks, further analysis would be of limited value in the remaining tasks in this study (see table 67). Subjective rating is prone to over- or under-rating. Hest (1976) reported in his study that health workers persistently rated their abilities high without significant change.

Parker, et. al. Dept. of International Health Surkhet District Community Survey (1979) concluded that health workers in Nepal were found to have over-rated their abilities in the performance of primary health tasks. In the present study, the evidence from the objective ratings suggests that CHOs self-perceived competence ratings tend towards over-rating.

Quite possibly many might not have taken environmental factors such as lack of resources into consideration when rating their competence. However self-perceived competence scores in this study did not show enough variation to be used for hypothesis testing. Therefore, based

on this experience and that of other studies, it has been concluded that measurement of CHOs' self-perceived competence is not useful for assessing their performance. In general, this technique has significant limitations and shortcomings.

An attempt to explore the relationship between self-perceived competence and the rating of CHOs performance by an observer was carried out. This is to test a hypothesis that a positive correlation exist between the two variables. For this exercise, tasks belonging to each variable were paired to correspond with each other as much as possible. Tasks in self-perceived competence were combined in some cases to represent a similar task in the observed tasks. Some tasks in self-perceived competence were not comparable with observed tasks (See Table 68) findings show that each task score in the observed rating when correlated with self-perceived competence show lack of correlation except for task number 6, "conduct health education". Overall there was a weak positive correlation (0.39). This result therefore provides little evidence of comparability.

From this, it could be concluded that the overall lack of significance leads to rejection of the hypothesis. However it is important to emphasise that there are differences between the instruments and the characteristics of the 2 variables. Self-perceived competence scores are discrete while observed scores consist of many sub-tasks.

#### 7.4 Indices Of CHO Performance

Performance measures used in this study included 10 tasks related to health problems in the community and frequently performed by CHOs in clinical settings. These 10 tasks with sub-tasks dealt with various aspects of CHOs' assigned

functions, i.e. preventive, curative, education and community functions. The 10 tasks were regrouped into CBOs' curriculum units as previously discussed. This provided performance mean scores in each unit (see Table 71). CBOs mean score in units 1 and 3 were higher than in unit 2. The interpretation of this result is that CBOs performance in unit 1 (General Health Care) and unit 3 (Organization and Management) were better than unit 2 (Personal Health Care). Unit 2 tasks involve such activities as: taking history of patients, performing physical examination, care of the handicapped and assessment of nutritional status. The reasons that CBOs' mean score were low in unit 2 and the discrepancies observed in the other units had already been fully described. What would be done here would be to elaborate and document some important points.

Based on the tasks observed at various clinical settings using CBOs curriculum instructional objectives as criteria to measure effective performance, the following points in each unit will be discussed.

Regarding the performance of tasks in unit 1, CBOs were found lacking in some specific tasks such as: reporting, recording and maintaining clinical

records; surveillance and recording of important indices. Knowing the target population being served, and the technical aspect of estimation of haemoglobin. During the survey, assessment of CHOs when it involved the technical aspect of estimation of haemoglobin was treated as inapplicable in general when equipments were not available to perform the task. Reporting, recording and effectively maintaining records to effect improvement in job performance both in the community and at the clinic should be considered important functions by CHOs as team leaders. Far more important is this to CHOs performance if proper records are collected, recorded and maintained. Proper record keeping will enhance CHOs performance because it can help them to plan clinic activities and to effectively evaluate achievement of the objectives at the clinic, in the community and with the Ministries. A surveillance system developed to monitor the occurrence of indices provides a model for many of the specific objectives relating to prevention of diseases, the promotion and maintenance of health in the community. These depend on systems through which occurrence of particular conditions or actions will be reported with accuracy and completeness. Whatever the source of necessary data, i.e. birth death, communicable disease, importance of quality of

data must be borne in mind.

WHO Report (1981) addressed this issue and recognized it as a general problem in many developing countries.

Data and information about health problems, health needs and health services are part of a system for health policy making, because this same data are often used directly in management and operations of health service.

Similarly, knowing the target population is related to service objectives. Efforts must be made to monitor community activities which will involve community outreach efforts. Where this is not done, patients are likely to use curative services to the detriment of preventive services, causing a high proportion of CHOs' time to be spent in curative functions rather than in preventive.

Concerning unit 2, performance of CHOs was relatively good, but lagged behind in the other two units. Emphasis at this point would be that more attention should be focused on practical training of CHOs in clinical functions. Great emphasis must be put on the importance of CHOs to take thorough patient history and to perform physical examination. Good performance of these tasks leads to correct diagnosis and treatment which ensures adequacy of

advice and explanation.

An important issue of concern is the low rate of use of arm circumference bands by CHOs. In a country where over 50% of infant mortality is due in part to malnutrition, it becomes imperative for CHOs to understand that use of arm circumference bands as an aid to early identification, detection and prompt treatment of malnourished children is essential. Studies in Nigeria which have confirmed reduction in infant mortality rate as a result of utilization of non-physicians in the area of early diagnoses, detection and prompt treatment of malnutrition among children included Cunningham, (1978) and Ransome-Kuti (1982). CHOs need to be vigilant even when lower cadres have been assigned to perform this task.

CHOs' tasks in unit 3 (Organization and Management) were well performed as reflected by the mean score. Clinics were well organized, lower cadres were well supervised. Community activities were performed well. Although CHOs community activities were observed for a limited time period there were evidence in almost all of the health centers such as donation of equipment, land or buildings by the members of the communities.



There were clubs and associations such as Fathers' Club and Women in Health Association, all organized and established as a result of interactions and effective involvement by CHOs with the community.

#### 7.5 Factors Related To Assessment of CHO Performance

CHOs performance was statistically related to professional background. Public Health Nurses' performance mean score in each unit and overall, were significantly higher than the Registered Nurses/Community Midwives and Higher Rural Superintendents. Registered Nurses/Community Midwives performed better than Higher Rural Superintendents with no statistically significant difference.

These findings confirmed earlier observations and studies in Nigeria that nurses with expanded training could effectively and easily handle primary health care problems in the community (Morley, 1963, 1973; Wellman, 1976; Cunningham, 1969, 1978). An important issue in the present study points to the fact that educational and professional background is related to better

performance. Public Health Nurses had post-graduate training in public health which the two other Professionals did not possess. Moreover, Public Health Nurses were traditionally used in the community for preventive services. It could be assumed that their prior educational and professional background in social and psychological aspects of community care influenced the better performance of Public Health Nurses compared to the other two professionals. Mojekwu (1976) observed a similar result in her study. The cadre of community health auxiliaries who performed best had a better educational background than the other two community health workers.

However, it has been observed that states differ in Nigeria in terms of culture, health status, health facilities and manpower utilization, and that each state could only nominate available candidates for training. This being so, health planners, institutions and states ought to realize this limitation among candidates who do not have nursing background. Furthermore, from personal interviews and available information obtained from institutions and members of staff, candidates with no nursing background had more problems learning

than candidates with nursing background.

Another indicator which had positive association with CIO performance was "Years of Experience." This finding was expected and in the right direction. It is logical that performance should improve with years of experience in the practice area, and, as CHOs mature; in the number of years in practice, performance should improve and quality of task performance should be better.

Another finding of interest was the positive relationship between CHOs performance and their perceived adequacy of training. CHOs were persistent in their ratings and strongly believed that the training received at various institutions met their needs in the practice areas. Cross-tabulation of two variables showed a significant relationship which confirmed their belief. From this finding,

it could be concluded that CHOs perception of their training is an important issue in actual performance. Since this is significantly important in the practice area, it would need to be constantly monitored. Studies of this nature would serve as food back for CHOs who would be able to relate learned skills and knowledge to the practice area adequately.

Another significant finding was the responses indicated by CHOs regarding their need for more practical training. In spite of the fact that CHOs strongly believed that their training was very good, they also persistently expressed desire for more practical training. Desire for more practical experience was statistically related with CHOs' performance, indicating that CHOs should benefit if more practical training such as workshop/seminar is made available. Fewer CHOs expressed desire for more theoretical training. Interpretation of this finding suggests that practical experience is vital for CHOs who are not doctors but are now expected to perform functions which were previously and traditionally only to be performed by doctors. Emphasis in CHOs training programme involved spending a longer proportion of time in practical and field experience. This suggests that skills and knowledge should not be assumed fixed but need constant upgrading among CHOs to ensure good performance in the clinical settings.

In the case of institutional variables and CHOs performance, it was observed that these variables were not sensitive measures to determine relationship between CHOs performance and the institutions they attended. This suggests that these indicators are somewhat independent of CHOs performance even though they are vital part of the training programme. Conversely, the inability to establish any association between institution variable and CHOs' performance could suggest that institutions which assigned low hours to theoretical and practical training and institutions with less than two teachers might have been, effective in the training of CHOs. However it must also be borne in mind that the variables utilized in this study were those obtained directly from each institution. From the author's impression, each institution appeared to have adhered to the guidelines given by the Federal Government that hours devoted to practical training should double that of theoretical training. Therefore the interpretation of these findings should be done with caution. The type of data available did not permit further analysis than the above.

Other specific findings obtained in order to identify factors which impede CHOs ability to effectively function in the clinical settings included the association of some specific problems listed in the questionnaires with CHO performance. Findings in this study revealed that the majority of CHOs reported that they were having problems performing their jobs. Many of the problems were related mainly to organization

Of significant importance were the results obtained when problems CHOs encountered in the clinical settings were analyzed against their professional background. More of the Public Health Nurses reported they were having problems in the performance of their job followed by Registered Nurses/Community Midwives than did the Higher Rural Superintendents - this was statistically significant. This data could be interpreted to mean that Public Health Nurses were more able to identify and recognize problems than the other two professionals possibly because of their background. Conversely, the other professionals might not recognize problems or were not aware of problems or possibly this could be due to under-reporting of problems among the other professionals, especially the Higher Rural Superintendents.

Another interpretation could be they had less problems. The data showed that all the Public Health Nurses except one responded to the question, admitting they were having problems while just over half the number of the Higher Rural Superintendants were observed to have reported to whether they were having problems or not.

During interviews, Public Health Nurses reported the gravity of their personal problems, such as lack of recognition and lack of incentives, apart from problems they encountered in the course of job performance. Therefore, "Problems Encountered" in this study remain a wide and broad terminology and its interpretation could not be limited to the list of problems in the CHOs questionnaire.

Similarly, "Years of Experience" showed a positive relationship with encountering of problems in job performance. The degree of problem encountered increased with years of experience. The plausible explanation could be that CHOs with longer years of experience reported more problems while CHOs with less than one year of professional experience reported fewer problems. This could suggest that the longer CHOs have been practicing, the more she/he would be able to identify problems and report them - most likely as the leader of the

health team. Conversely, there might have been significant improvement in the training institutions which made it possible for the newly qualified to rely upon their own strengths, and, therefore, to cope with problems compared with the CHOs earlier trained. Also as has been indicated in this study, it might be that generally, professional background is related to identification of problems in the clinical settings. Furthermore it might be found with future studies that duration of service is a function of the professional background.

It is important to note that no significant association was established between CHOs performance at clinical settings and resource constraints as had been anticipated or as hypothesized. Lack of drugs, vaccine and equipment was not found to be related to CHOs performance at the clinical settings, despite the fact that they are essential to performance. The way performance was assessed involved several criteria. For example CHOs should know other measures to take when resources are lacking. Other reason identified from personal observation, not based on analytical findings was that while CHOs considered lack of those resources as problems, the majority of them, however, displayed a high sense of ingenuity to minimize the effect of lack of these items on their performance. Examples cited during the field survey were as



follows: Prescribing drugs and giving full explanation of the purchase at drug stores including instruction of correct utilization. Working with the Community to get many facilities essential to perform health functions. Charging clients small amounts of money which serve as revolving fund in order to ensure continuous purchase and supply of medication to patients. Conducting daily health education <sup>sessions,</sup> using role play which appeared to have influence and impact on clients. One assumes that this added a financial burden on patients and the community, but personal impression based on formal interviews obtained from community leaders was that one of the features of primary health care is to make the community feel they are part of the health care system. It has generated a sense of fulfillment that they are being given the opportunity to take part in the care of their own health using local talents and resources with support from the government.

In this study 50% of CHOs reported in their questionnaires that they were not able to apply effectively all skills and knowledge acquired at their training institution. Empirical findings of CHOs assessment in the clinical settings was contrary to their own opinion in this study. However, Resource constraints was the major problem CHOs encountered in the course of performing their jobs at clinical settings. Lack of drugs, vaccine and equipment were statistically

related with extent of problems CHOs encountered in clinical settings. Furthermore, the longer the duration when these resources are not available, the greater the extent of problems CHOs encountered. Bamisoye (1978) identified lack of drugs were among many other factors which affect the use of health services by patients. Other studies with similar conclusion were those of Geeler (1978) and Cunningham (1978). Cunningham concluded in his study that lack of drugs caused apathy among both patients and staff.

Another significant finding was related to the need for more practical training which had a positive relationship with encountering of problems by CHOs at clinical settings. This reinforced and supported the point that CHOs in fact would benefit from formal continuing education not available at present.

With respect to the institutional variable and the extent to which CHOs were encountering problems in job performance, CHOs who attended institutions where less than two tutors were teaching admitted they were having problems at a significantly higher rate than other CHOs. It might be concluded that more teachers teaching CHOs with more attention paid to supervision especially during the period of practical training would lead to less

problems encountered by CHOs in performing their jobs at clinical settings after training. This would enhance CHO performance.

In conclusion, additional information provided by CHOs in discussion regarding problems they were having in the course of job performance included lack of recognition by the government, and existing professionals such as doctors and nurses. In some States, CHOs were not allowed to fully practice their newly acquired skills and knowledge either as a result of ignorance pertaining to the capacity of CHOs or, in some cases, it was assumed to be due to deliberate bias on the part of existing health professionals. Of major importance was lack of incentives which many CHOs reported. At the time of this study, CHOs were agitating for not having a scheme of service and there was much unrest and dissatisfaction over the issue. Many of them living in the far rural areas did not have transport to travel to the cities when in need of essential materials to run the clinics. Many were living in remote areas in the community with lack of potable drinking water and decent accommodation. Despite these, many CHOs, especially in Zone A and Zone B stated that they were satisfied with their job, they enjoyed the independent role associated with the job.

## CHAPTER VIII

### SUMMARY CONCLUSION AND RECOMMENDATION

The Federal Government's efforts to bring basic health services to a larger population, especially in the rural areas, is one of the priorities of the health care system. There is also the assumption that non-physicians with appropriate training can provide most of the primary health care needed with adequate supervision. Under the present human and economic resource constraints in the country, the optimum use of these limited resources are being explored.

Non-physician health providers are being used worldwide mainly because of the shortage of doctors for rural work, and because this is the most efficient use of available resource. Some have health background, while some have not. China provides a unique example of using Barefoot Doctors to provide primary health care to a population of well over 800 million.

The concept of using non-physician health providers to perform tasks that do not require highly sophisticated and scientific education is accepted, especially in the developing countries. This new approach has

been developed by allocating responsibilities to various members of the health team. Systematic course design for training various categories based on health problems and emphasis on practical training for specific tasks have been developed.

Evaluation has become an intrinsic part of the health system for more than one purpose, e.g. identifying problems or for monitoring progress.

This study has attempted to examine the activities of those CHOs who are the team leaders of non-physicians assigned to provide primary health care in the country. The study has examined the volumes of activities performed by these cadres during <sup>normal</sup> working hours for two days at health care settings. Attempts have been made to examine the

quality of tasks they perform in order to determine that they were effective in performing the tasks as taught in the training institutions. The study has also looked at distinctive characteristics of CHOs such as professional background, years of experience and other organizational variables such as availability of resources - drugs, vaccine and incentives which could influence their performance.

A significant part of the study has been the

development of the instrument and its validation making it possible to objectively assess CBOs performance at clinical settings.

The author conducted a field study observation using work sampling and task analysis of CBOs' activities. Four different questionnaires were designed to obtain information on characteristics of CBOs, their training institutions, their educational needs, their utilization pattern and factors which they perceived to enhance or impede their performance. Questionnaires from the institutions provided information on the numbers of CBOs they have trained, the state of origin of CBOs trained by each institution and general information about the number of hours assigned to theoretical and practical experience including number of part-time and full-time teachers available to teach CBOs. The faculty questionnaires attempted to collect information about the quality and completeness of teaching among members of staff of each institution but without full success. Therefore, because of inadequate data, this aspect could not be explored. Questionnaires designed for Chief Health Officers in each state Ministry of Health provided information about the utilization of

CHOs in the states and the Officers' perceived usefulness of CHOs in the state. A majority of Chief Health Officers felt CHOs are useful and they have been effective in curative and preventive functions.

384 CHOs returned questionnaires. From these 54 randomly selected samples were observed in 10 states randomly selected from the 19 states. These were each observed in health care settings for a total of two working days of approximately five hours, each day.

Findings in this study have been presented in the result section and discussed in the last chapter. The baseline data for CHOs health utilization in primary health care in Nigeria have been presented. Their roles and general characteristics have been highlighted including their perception of adequacy - of - training; <sup>including</sup> job performance, and their training needs. The number of activities with which CHOs were involved and the distribution of their activities in various categories of functions are manifold. The degree of the problems the CHOs were confronted with are described. CHOs assessments of task performance results have been pinpointed, deficiencies in their

performance have been discussed.

Storms (1979) stated that neither service statistics nor functional analysis will establish why a discrepancy exists between training and performance. Further along she enumerated factors which could influence health workers performance. Among them are target population, available resources, workers own satisfaction, willingness of other members of the team to delegate tasks and supervisory support. It is for policy makers, institutions and workers themselves to understand factors that could influence performance.

Specific findings in this study were that CHOs performance was influenced by "Professional Background," therefore the latter variable is an important determinant of CHOs performance and should be an important concern of government and institutions when selecting students for CHO training. Granted that these states are not homogeneous and could only nominate available candidates it must be greatly emphasized that the role and responsibilities expected of CHOs after qualification are enormous. Many practice in distant rural areas without any supervision. Furthermore, some information was gathered from



the members of staff at various institutions indicating that candidates with low educational background have problems with learning. In order to minimize this problem, it is recommended that an orientation course for candidates with low educational background would be appropriate before the beginning of each CHOs training session. This type of orientation course organized by institutions would benefit such candidates and would help to alleviate frustration on the part of students and members of staff when the actual training session begins. It will ensure better performance in the practice area after qualification. Conversely, the guideline recommended by the Federal Government relating to pre-test for all candidates should be strictly adhered to by all institutions in order to ensure that suitable candidates are selected.

Findings which showed a positive association between performance and years of experience were expected. As CHOs mature in the practice areas, performance should improve. However, skills and knowledge should not be assumed static but stimulated from time-to-time. This could account for another significant finding indicated by CHOs as to the need for practical experience. Need for

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More practical training was statistically related to CBOs performance. This suggests that CBOs would benefit from continuing educational programmes such as workshops and seminars which are not available at the moment. CBOs were interviewed during the field survey, and the feedback was that many have not had any formal or well organized in-service training or workshop since <sup>they</sup> qualified. To improve performance, it is imperative that skills and knowledge be nurtured and stimulated constantly. CBOs have been assigned tasks that were previously performed by doctors, e.g. physical examination, diagnosis of diseases, prescription of drugs, treatment of patients and other complex tasks such as organization and management. To enhance CBOs performance it is recommended that a formal mechanism of continuing education and workshops be organized for them.

Some other interesting findings related to CBOs performance was the significant association between their performance and adequacy of training overall. However, a thorough examination of the

data showed that CBOs were deficient in performing some specific tasks in CBOs curriculum units as stipulated in the standing orders. Examples are

physical examination and measuring arm circumference. In a country where over 50% of infant mortality rate is due in part to malnutrition, it becomes imperative for CHOs to understand that use of arm circumference bands as an aid to early identification, detection and prompt treatment of malnourished children is essential and that even where lower cadres perform the tasks, it should be constantly monitored by CHOs.

In reviewing CHO curriculum, and comparing some tasks CHOs performed during the field survey, the author's personal impression was that some tasks would need major examination and review. For example, "care of the handicapped" and "care of the aged" received limited attention of CHOs in the clinical setting.

It is recommended that the present curriculum designed by the Federal Government over 5 years ago be reviewed. The present one should be regarded as

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It is recommended that the present curriculum designed by the Federal Government over 5 years ago be reviewed. The present one should be regarded as

a baseline to guide the new one. Institutions, health planners, Chief Health Officers, community leaders, other intersectorial organizations, e.g. accountants, etc. and above all the CHOs, should be used as resource people in the designing of the new curriculum.

Similarly, the Standing Order which is extremely vital for CHOs during training and after training should be reviewed along with the CHOs' curriculum. During the survey it was observed that many CHOs, used their standing order correctly, but majority discussed the confusion they were encountering in the use of the standing order designed by the Federal Ministry of Health. Areas dealing with obstetrics should receive better attention. The standing order in general should be simple, clear and concise so that CHOs would be motivated to use it conveniently.

Other significant findings generated in this study were those related to the extent of problems CHOs were encountering in the course of job performance. About 50% stated that they were not able to adequately apply all their acquired skills and knowledge. Resource constraints featured prominently and were significantly associated with

problems CHOs were encountering in the course of performing their jobs. The assumption would be that if CHOs have problems of lack of essential medication at the clinical settings, their performance eventually would be adversely affected, skills and knowledge would become a shamble. One could speculate that this condition would lead to attrition or cause CHOs to avoid working in the clinical settings. The implication for the government could be wasted human resources, this also could impede the achievement of the national objective of improved coverage. Since the provision of adequate health services in the rural areas is of a primary health care nature, new approach in the distribution and supply of drugs demand reform. Drugs referred to as essential by WHO (1978) to meet health problems, such as anti-malarials, vaccines and appropriate equipment to keep them viable should be provided. It is obvious that reduction in mortality and morbidity rates among larger population would be advantageous to the nation when these items are available. Cost to the nation in general would be considerably reduced if Government provides essential resources for primary health

care than the cost for secondary and tertiary care. (National Council for International Health 1982). Other strategies would include enhancing CHOs awareness of how to effectively maintain a steady and reliable supply of essential drugs and vaccine (Battersby, 1983, McMahon, 1980). Several countries have adopted limited list of essential drugs based on health problems and community needs. An example of such countries is Sri Lanka (Lall and Bibile, 1978)

From personal interviews obtained from CHOs and Chief Health Officers in the states, the Federal Government's efforts, to train CHOs nominated by each state, and after training return each CHO to his/her state of origin is a well conceived policy and appears to be meeting each individual state's manpower needs. However, the impression gathered from CHOs during the field survey was of dissatisfaction due to lack of recognition and lack of motivation and incentives on the part of the government. Taylor et al (1976) conducted a survey in India among interns to examine their attitudes toward rural work. He generated useful findings but major conclusion was that doctors would probably work in the rural areas if opportunities such as good living conditions, professional advancements, supplies of medications and improved condition of service in general are available.



Even though that study described interns, it could well apply to CHOs or any other health providers. Similar reasons might explain why doctors in Nigeria would not work in the rural areas. With the new approach, it is recommended that CHOs should be accorded better recognition and provided with incentives. This would avert a situation which would lead to frustration and consequently to lack of interest in taking the course or wanting to work in the rural areas after qualification.

Another important empirical observation not based on analysis was CHOs expressed feelings about the attitudes of the existing health professionals such as doctors and public health nurses in the field. Doctors and nurses are pressure groups with certain characteristics. This aspect should be an important concern of government both at the federal and state level to make all health professionals understand that implementation of primary health care objectives requires pluralistic approach from the health care providers including intersectorial organizations.

The government could achieve this by calling on all medical and nursing schools to design curricula which should have relevance to the functions performed in the community. Doctors and

nurses should be prepared to work in the preventive activities in the community during the course of their training so they would learn about primary health care and the personnel functions. This would ensure less conflict over role and responsibilities among the health care providers in the field.

The study was not able to determine completeness of training courses in each institution due to lack of sufficient data from members of staff of institutions training CHOs. However, from all indications, findings show that many CHOs are satisfied with the training received from their respective institutions. In view of the fact that quality of training is vital to CHOs' performance in the practice area, it is recommended that additional research which will address quality of teaching methodology in each training institution be conducted. Performance of various institutions could then be compared. This would serve as feedback for training improvements and any necessary modifications.

A major comment regarding the methodological observation of CHOs is that the technique had been useful but would need to be refined.

Therefore it could be concluded that the present study raises some questions that need further research in the future. Other factors affecting performance should be explored.

Finally, there are three purposes of evaluation:

- To support good practice by identifying its efficacious and efficient elements.
- To indicate areas of practice in need of improvement and to provide ongoing education for trainees about their own practices. But these purposes are not served if evaluation results are not fed back into delivery system and acted upon.
- Results should enter the decision making process at the point where standards are set for acceptable levels of care.

The findings from such a study should have considerable relevance to policy makers concerned with primary health care and continuing medical education. It is hoped that some of the suggestions in this chapter, found to enhance the performance of

CHOs in the clinical settings will be considered for implementation.

#### EPILOGUE

I would like to end this thesis with the writing of Professor Rama Chandran.

"Evaluation is a complex process, involving both subjective judgement and objective measurements. In fact, there is no one unique way of performing an evaluation, since evaluation becomes judgement ultimately. However, as long as it is understood that the main purpose of evaluation is decision-making and not condemnation or approbation, unavoidable subjectivity is no impediment" (India Council of Medical Research, 1980, p. 379).

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QUESTIONNAIRE FOR COMMUNITY  
HEALTH OFFICERS (CHO)

1. Tick the Institution Attended:

- 1. Institute of Child Health and Primary Care, College of Medicine.
- 2. School of Hygiene, Eleiyele, Ibadan
- 3. Faculty of Health Sciences, Ife.
- 4. Dept. of Community Health, Univ. of Benin, Benin-City
- 5. Dept. of Community Health, Univ. of Nigeria, Nsukka
- 6. Dept. of Primary Care, Univ. of Calabar, Calabar
- 7. Dept. of Community Health, Amadu Bello Univ. Zaria
- 8. Dept. of Community Health, Univ. of Ilorin, Ilorin
- 9. Dept. of Community Health, Univ. of Jos, Jos.
- 10. Other (specify)

Col. 1

2. Indicate year of attendance of CHO Course

- 1. 1979/80
- 2. 1980/81
- 3. 1981/82
- 4. 1982/83

Col. 2

3. Who sponsored your attendance at the course?

Col. 3

4. What was your post before you under took the CHO Course:

- 1. Public Health Nurse
- 2. Community Health Supervisor

Col. 4

- 4. Higher Rural Health Superintendent
- 5. Nursing Sister
- 6. Nursing Superintendent
- 7. Other (specify)


5. Where have you worked since you qualify as CHO?

Col. 5

- 1. Comprehensive Health Clinic
- 2. Health Center
- 3. Ministry of Health
- 4. Local Clinic
- 5. Hospital
- 6. Teaching at School of Health Technology
- 7. Health Management Board
- 8. Voluntary Organization
- 9. Other (specify) \_\_\_\_\_



6. Indicate how long you have been working since qualified as CHO?

Col. 6

- 1. Under 1 year
- 2. 1 - 2 years
- 3. 2 years and above



7. Where are you working presently?

Col. 7

- 1. Comprehensive Health Center
- 2. Health Center
- 3. Ministry of Health
- 4. Local Clinic
- 5. Hospital
- 6. Teaching at School of Health Technology
- 7. Health Management Board
- 8. Voluntary Organization

- 4. Higher Rural Health Superintendent
- 5. Nursing Sister
- 6. Nursing Superintendent
- 7. Other (specify)


5. Where have you worked since you qualify as CHO?

- 1. Comprehensive Health Clinic
- 2. Health Center
- 3. Ministry of Health
- 4. Local Clinic
- 5. Hospital
- 6. Teaching at School of Health Technology
- 7. Health Management Board
- 8. Voluntary Organization
- 9. Other (specify) \_\_\_\_\_


Col. 5

6. Indicate how long you have been working since qualified as CHO?

- 1. Under 1 year
- 2. 1 - 2 years
- 3. 2 years and above


Col. 6

7. Where are you working presently?

- 1. Comprehensive Health Center
- 2. Health Center
- 3. Ministry of Health
- 4. Local Clinic
- 5. Hospital
- 6. Teaching at School of Health Technology
- 7. Health Management Board
- 8. Voluntary Organization


Col. 7

1. Under 1 year

2. 1 - 2 Years

3. 2 years and above

9. Indicate how CHO training program has adequately prepared you for your present job

1. Very well

2. Well

3. Just adequate

4. Poorly

10. Your CHO curriculum consists of 3 units. Indicate how you have been taught in each unit

Very well      Well      Just adequate      Poor

Unit 1 - General Health Care

Unit 2 - Personal Health Care

Unit 3 - Organization and Management of BHSS

11. How would you grade the practical training

Very well      Well      Just adequate      Poor

General Health Care

Personal Health Care

Organization Management of BHSS

12. Do you feel that you need further training in any of the Units either theory or practice?

Theory                      Practice

Yes   No   Don't know      Yes   No   Don't know

General Health Care

Personal Health Care

Organization Management of BHSS

13. Does your present job permit you to use all your skills or knowledge you learned in your CHO training?

If No, specify the aspect(s) not being utilized and the reason why

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14. Are these drugs/vaccines available at your Clinic?

	All year Round	6 months of the yr.	3 months of the yr.	Not Available at all	
Aspirin tabs	—	—	—	—	Col. 21
Iron tabs	—	—	—	—	Col. 22
Chloroquine tabs	—	—	—	—	Col. 23
Penicillin Inj.	—	—	—	—	Col. 24
Streptomycin Inj.	—	—	—	—	Col. 25
Chloramphenicol Inj.	—	—	—	—	Col. 26
Sulphadimidine tabs	—	—	—	—	Col. 27
DPT Vaccine	—	—	—	—	Col. 28
Polio Vaccine	—	—	—	—	Col. 29
BCG Vaccine	—	—	—	—	Col. 30
Meas Solution	—	—	—	—	Col. 31
Measles Vaccine	—	—	—	—	Col. 32
Tetanus Toxoid	—	—	—	—	Col. 33

15. Is the equipment listed below available at your clinic?

	Not Present	Present and out of order	Present and In order	
Adult Weighing Scale	—	—	—	Col. 34
Baby Weighing Scale	—	—	—	Col. 35
Stethoscope	—	—	—	Col. 36
Arm-Circumference Band	—	—	—	Col. 37
Thermometers	—	—	—	Col. 38
Sphygmomanometer	—	—	—	Col. 39



	Not Present	Present and out of order	Present and in order
Otoscope	—	—	—
Torch Light	—	—	—
Wooden Spatula	—	—	—
Needles and Syringes	—	—	—
Haemoglobinometer	—	—	—
Reagents for urine	—	—	—

Col. 40  
  
 Col. 41  
  
 Col. 42  
  
 Col. 43  
  
 Col. 44  
  
 Col. 45

16. Do you have any problem in the course of your job performance?

Yes No

Col. 46

If yes, mark all of those that apply:

1. Lack of drugs and equipment
2. Lack of cooperation from the Clinic Director
3. Lack of cooperation from the Ministry of Local Government Authority
4. Lack of Personnel
5. Other (specify) \_\_\_\_\_

Col. 47  
  
 Col. 48  
  
 Col. 49  
  
 Col. 50  
  
 Col. 51

17. Indicate how well you can perform these tasks

	Very well	Well	Poorly	Not at all
1. Take History	—	—	—	—
2. Perform Physical Exam.	—	—	—	—
3. Conduct Health Ed.	—	—	—	—
4. Screen for Nutritional Problem	—	—	—	—
5. Weigh Patient	—	—	—	—
6. Conduct AHC	—	—	—	—
7. Carry out haemoglobin estimation	—	—	—	—
8. Give various immunizations	—	—	—	—

Col. 52  
  
 Col. 53  
  
 Col. 54  
  
 Col. 55  
  
 Col. 56  
  
 Col. 57  
  
 Col. 58  
  
 Col. 59



QUESTIONNAIRE FOR INSTITUTION  
TRAINING COORDINATOR HEALTH OFFICER

Q.1. Name of Your Institution:

\_\_\_\_\_ Col. 1  
\_\_\_\_\_

Q.2. When did your Institution start the training of CHOs?

\_\_\_\_\_ Col. 1  
\_\_\_\_\_

Q.3. Please complete these data

State of Origin	Number Admitted			
	1979/80	1980/81	1981/82	1982/83
1. Lagos State				
2. Oyo State				
3. Ogun State				
4. Ondo State				
5. Bendel State				
6. Anambra State				
7. Borno State				
8. Bauchi State				
9. Imo State				
10. Kwara State				
11. Plateau State				
12. Jigawa State				
13. Cross Rivers State				
14. Congo State				
15. Kaduna State				
16. Kano State				
17. Niger State				
18. River State				
19. Sokoto State				
20. Federal C/A				

Col. 1  
\_\_\_\_\_

Q.4. Please state the training objectives of the CHD Program run by your institution.

\_\_\_\_\_ Col. 4  
\_\_\_\_\_

Q.5. Do you feel the objectives of the program are being achieved?

- 1. Fully
- 2. Partly achieved
- 3. Not achieved
- 4. Don't know

Col. 5  
\_\_\_\_\_

If partly achieved or not achieved, please explain:

\_\_\_\_\_  
\_\_\_\_\_

Q.6. Kindly state the total hours or percentage of the time assigned to the following throughout the program.

Col. 6

- a. Theory
- b. Practical

Q.7. Kindly state the total number of teachers/lecturers engaged to teach CMOs throughout the program.

Col. 7

- a. Total number full-time lecturers
- b. Total number part-time or guest lecturers

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FACULTY QUESTIONNAIRE  
FOR THE TRAINING OF CHO.

Q. 1: Name of Institution and Department Col. 1

Q. 2: What is your basic Profession?

1. Medical Doctor

2. Nurse

3. Social Scientist

Col. 2

4. Statistician

5. Epidemiologist

6. Other specify \_\_\_\_\_

Q. 3: In what year did you obtain your basic professional qualification?

Col. 3

Q. 4: Do you have a public health degree or diploma? Yes/No.  
If yes, which \_\_\_\_\_

Col. 4

Q. 5: In what years did you obtain your public health degree/diploma?

Col. 5

Q. 6: How many years have you been teaching health workers at this or any other institution?

Col. 6

Q. 7: Are you a full time or part-time Lecturer?

Col. 7

2.

Q. 8: What course(s) do you teach the CHO? Col. 8

Q. 9: For each course, state the number of hours that you teach throughout the program. Col. 9

<u>Course</u>	<u>No. of hours</u>
66666666	
<hr/>	<hr/>
<hr/>	<hr/>

Q.10: For each course indicate the number of hours throughout the program that you teach by the following methods. Col. 10

	<u>Name of course</u>	<u>No. of hours</u>
1. Formal Lecturer	<hr/>	<hr/>
2. Clinical Teaching	<hr/>	<hr/>
3. Case studies	<hr/>	<hr/>
4. Role play	<hr/>	<hr/>
5. Research practice	<hr/>	<hr/>
6. Administrative practice	<hr/>	<hr/>
7. Other (specify)	<hr/>	<hr/>

Q.11: State the objectives of the course that you teach. (if possible attach a copy) Col. 11

Q.12: Do you feel that the objectives of the course(s) you teach have been achieved at the end of the training of CHOs? Col. 12

- 1. Fully Achieved
- 2. Partly Achieved
- 3. Not Achieved

3.

If partly achieved or not achieved explain and give details (check as many answers as are applicable). Col. 13

- 1. Is it because of lack of manpower?
- 2. Is it because of lack of teaching funds?
- 3. Is it because the students were of low educational/Professional standard?
- 4. Is it because of lack of teaching materials?
- 5. Is it because of lack of research funds?
- 6. Is it because of lack of time?
- 7. Is it because little emphasis is given to the didactic teaching?
- 8. Is it because of lack of coordination between didactic and clinical-teaching
- 9. Is it because you had no direct input into the initial syllabus design

Other explanation: \_\_\_\_\_

Q. 13 What suggestions would you have for the improvement of the training of CH0? Col. 14

\_\_\_\_\_  
\_\_\_\_\_

POLICY QUESTIONNAIRES FOR CHIEF HEALTH OFFICERS  
ON COMMUNITY HEALTH OFFICERS WORKING IN YOUR STATE

Question 1

Please tick your appropriate State.

- |     |                   |                          |                                    |
|-----|-------------------|--------------------------|------------------------------------|
| 1.  | Anambra State     | <input type="checkbox"/> | Col. 1<br><input type="checkbox"/> |
| 2.  | Bendel State      | <input type="checkbox"/> |                                    |
| 3.  | Cross River State | <input type="checkbox"/> |                                    |
| 4.  | Imo State         | <input type="checkbox"/> |                                    |
| 5.  | Ogun State        | <input type="checkbox"/> |                                    |
| 6.  | Oyo State         | <input type="checkbox"/> |                                    |
| 7.  | Ondo State        | <input type="checkbox"/> |                                    |
| 8.  | Rivers State      | <input type="checkbox"/> |                                    |
| 9.  | Lagos State       | <input type="checkbox"/> |                                    |
| 10. | Niger State       | <input type="checkbox"/> |                                    |
| 11. | Kwara State       | <input type="checkbox"/> |                                    |
| 12. | Plateau State     | <input type="checkbox"/> |                                    |
| 13. | Congola State     | <input type="checkbox"/> |                                    |
| 14. | Benue State       | <input type="checkbox"/> |                                    |

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2.

15. Sokoto State

16. Kaduna State

17. Kano State

18. Bauchi State

19. Borno State

Question 2

How many CHOs have you trained for your state in the following year?

Col. 2

1979/80

1980/81

1981/82

1982/83

Question 3

How are the candidates for CHOs training selected annually?

Col. 3

1. Seniority based on date of last promotion

2. Interest indicated by the candidate herself.

3. Reward for hard work.

3.

4. Candidate's interest in rural health work.

5. Others please specify

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Question 4

Is there any condition of service or incentive for CHOs working in your State?

Col. 4

Yes

No

Dont know

If yes, please attach a copy.

Question 5

How many CHOs do you have working in your State?

Col. 5

1. Under 10

2. 11 - 20

3. 21 - 30

4. 31 - 40

5. 41 - 50

6. Above 50

Question 6

Please state the number of CHOs working presently in the following areas in your state.

Col. 6

- 1. Teaching at the Schools of Health Technology.
- 2. Doing Administrative work in the Ministry of Health.
- 3. Doing Administrative work in the Health Management Board
- 4. Performing field work at any of Health Clinics/Centres in the state
- 5. Hospital outpatient clinic
- 6. Local Government Offices
- 7. Voluntary Agency
- 8. Others - Please specify

---



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Question 7

Out of the CHOs working at the Health Clinic/Centres in the field, please state the number of CHOs working in.

Col. 7

State capital

Places other than State Capital

5.

Question 8

Indicate any or all of the areas which CHO in your State has been useful.

Col. 8

1. Health Promotion

2. Health Protection

3. Curative

4. Rehabilitation

Question 9

How effective are CHOs working in the field work and the Community in your state?

Col. 9

1. Not effective

2. Just effective

3. Very effective

4. Excellent

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TASK ANALYSIS FORM

Health Center

DAY/DATE

NAME OF CHD: \_\_\_\_\_

\_\_\_\_\_

FORM NUMBER: \_\_\_\_\_

-----

START TIME: \_\_\_\_\_

PATIENT NUMBER: \_\_\_\_\_

AGE: \_\_\_\_\_

SEX: \_\_\_\_\_

PURPOSE OF VISIT: \_\_\_\_\_

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CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very	Well	Poor	Not at	Not applicable
		Well 3	2	1	All 0	
1. Establishment of Rapport	Greets, introduces herself, calls child's name, sits close, not attending to anything else					<input type="checkbox"/>
2. HISTORY OF A PREGNANT WOMAN						<input type="checkbox"/>
Demographic data: name, age, marital status, address, no. of children, occupation, husband's occupation	Uses simple language; ensure that pt understand her Records in patient's card					<input type="checkbox"/>
3. History of Present Pregnancy						<input type="checkbox"/>
Duration of present pregnancy, last menstrual period, whether ill during this pregnancy, whether on any medication	Assist mother, Encourage her to describe events around the time & recorded Display medication if yes and if possible					<input type="checkbox"/>
4. History of Previous Child-birth/Abortion						<input type="checkbox"/>
No. of previous pregnancies/abortion, nature of deliveries & where, whether ANC received & where, birthweight of previous children, whether ill during previous pregnancies, allow mother to talk	Record all information Display previous record if any					<input type="checkbox"/>
5. HISTORY OF A CHILD						<input type="checkbox"/>
Age, birthweight of child, No. of siblings, parents occupation, who looks after child if mother works	Record all information					<input type="checkbox"/>
6. Developmental History						<input type="checkbox"/>
Age child sat, walked, teeth, eruption. Whether handicapped, e.g. blind, deaf, mongrol, etc.	Visual observation, make comments Visual observation record					<input type="checkbox"/>
7. Nutritional History						<input type="checkbox"/>
Breast/other foods offered and method of preparation	Record all information Make comments					<input type="checkbox"/>
8. Immunization History						<input type="checkbox"/>
Type of immunization received if any where and when? (mother ill) when immunized	Display records if any Check for any scars					<input type="checkbox"/>

CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very Well 3	Well 2	Poor 1	Not at All 0	Not Applicable 9
9. <u>History of Past Illness</u>						<input type="checkbox"/>
10. <u>History of Present Illness</u>	Visual observation, make comments					<input type="checkbox"/>
11. <u>HISTORY OF AN ADULT</u>						<input type="checkbox"/>
12. <u>DEMOGRAPHIC DATA:</u> Name, age, marital status, occupation, No. of children	Asked and Record					<input type="checkbox"/>
13. <u>Menstrual history</u>	▪					<input type="checkbox"/>
14. <u>Gynecologic history</u>	▪					<input type="checkbox"/>
15. <u>History of Previous Illness</u>	▪ Listen Attentively					<input type="checkbox"/>
<u>TASK NO. 2</u>						
A. <u>PHYSICAL EXAM. OF A CHILD</u>						
1. <u>Establishment of Rapport</u>	Greet, Introduces herself, calls child's name					<input type="checkbox"/>
2. <u>Observe General Appearance, Color, Posture, Movement</u> Do systematic inspection of a child	Sits Close, Visual observations, touches child, make comments Wash hands, put on couch or leave on mother's lap					<input type="checkbox"/>
3. <u>HEAD - Palpate for swelling</u> Runs hand through hair feel fontanelle	Use hands					<input type="checkbox"/>
4. <u>FACE - Eyelids, forehead, nose, pupils, mouth, ears</u> separately, pr	Pull eyelids apart, uses touch light to inspect eyes separately, presses nose gently, uses wooden spatular for tongue to inspect throat, Watches reaction, Make Comments					<input type="checkbox"/>
5. <u>NECK - For swelling or fracture clavicle</u>	Presses gently and watches reaction					<input type="checkbox"/>
6. <u>UPPER LIMBS - For extra digits webbing, posture of feet</u>						<input type="checkbox"/>
7. <u>CHEST - Respirations</u> (Rate/depth)	Flashes eyes on Chest					<input type="checkbox"/>
Use Stethoscope for Systematic Examination	place stethoscope into ears • on diaphragm Listen attentively					<input type="checkbox"/>

TASK NO.

-4-

CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very Well	Well	Poor	Not At All	Not applicable
		3	2	1	0	
<p>C. <u>PHYSICAL EXAM. OF A PREG. WOMAN</u></p> <ol style="list-style-type: none"> <li>1. Establishment of Rapport</li> <li>2. General Appearance</li> <li>3. HEAD</li> <li>4. FACE</li> <li>5. NECK</li> <li>6. LIMBS</li> <li>7. CHEST</li> <li>8. BREAST</li> <li>9. GENITALIA</li> <li>10. Abdomen - Palpate for foetus position Check foetal's heart beat</li> <li>11. VITAL SIGNS B/P</li> <li>12. URINE</li> <li>13. ADVICE</li> </ol>	<p>Put mother on couch, rather on her back, gently palpate</p> <p>Use stethoscope to count heart beats - make comments</p>					
<p>TASK NO. 3 <u>Assess Infant Problems</u></p> <ol style="list-style-type: none"> <li>1. ESTABLISH GOOD RELATIONSHIP Assess child nutrition indirectly by asking the following:             <ol style="list-style-type: none"> <li>(a) Pattern of breast feeding</li> <li>(b) Other foods offered</li> <li>(c) No. of times each day child is fed</li> <li>(d) Mother's knowledge of food sources and method of preparation.</li> </ol> </li> </ol>	<p>Greets/smiles, introduces herself, call child's name</p> <p>listen attentively, record</p>					



CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very	Well	Poor	Not	at	Not
		Well	Well	Poor	All	at	Applicable
		3	2	1	0		9
2. WEIGH THE CHILD	Balance Clinic Scale at Zero for accuracy at the beginning Weigh all children naked						<input type="checkbox"/>
3. CHART THE CHILD'S PRESENT WEIGHT	Record findings in clinic Baby's weight progress chart						<input type="checkbox"/>
4. INTERPRETE WEIGHT	Inspect child's weight in position. If close or below the red line child is not getting enough						<input type="checkbox"/>
5. USE ARM CIRCUMFERENCE BAND	Fix arm circumference band correctly on the upper arm Read it accurately						<input type="checkbox"/>
6. COUNSEL THE MOTHER A Child who shows weight loss or poor weight gain	<ol style="list-style-type: none"> <li>1. PRAISE mother if doing well</li> <li>2. Tell mother her findings</li> <li>3. Allow mother to discuss what problems she has with feeding</li> <li>4. Explain the feeding the child should be receiving</li> <li>5. Refer mother to food demonstration classes</li> <li>6. Give mother appointment for review and follow up</li> </ol>						<input type="checkbox"/>
<b>TASK NO 4</b> <i>For Adult Learners Ed</i>							
1. Demonstrate the application of and teaching techniques to planning session for a selected skill or topic	<ul style="list-style-type: none"> <li>- Choose appropriate topic for the group</li> <li>- Use simple understandable language for the group</li> <li>- Get the clinic ready for the specified time given</li> <li>- Have planned teaching notes</li> </ul>						<input type="checkbox"/>
2. Know target group e.g. Vulnerable mothers i.e. Primip mother with first baby	Pay extra attention to new comers						
3. Select relevant contents and appropriate method of presentation	<ul style="list-style-type: none"> <li>- State clearly the area in which learner must gain competence</li> <li>- Use other members of staff</li> <li>- Use simple audio-visual aids, e.g. Role play planned graph. Allow mothers to participate e.g. if giving food demonstration locally available food must be prepared</li> </ul>						<input type="checkbox"/>

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CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very Well 3	Well 2	Poor 1	Not at All 0	Not applicable 9
4. Select and apply evaluation tools e.g. Organize Baby show periodically	Allow mothers to ask questions					<input type="checkbox"/>
<b>TASK NO. 5</b> <i>Carry Out Haemoglobin Test</i>						
1. Ensure supply of Lab. Equipments. Collaborate with appropriate authority	Availability of necessary laboratory equipments					<input type="checkbox"/>
2. Recognize when to perform test according to standing orders	<p>Know various media for obtaining specimen e.g., finger pricks, heel stab</p> <ul style="list-style-type: none"> <li>- Check eye-lids, listen to complaints</li> <li>- Carry out haemoglobin estimation on the following:               <ul style="list-style-type: none"> <li>- Newly registered pts.</li> <li>- Suspected cases of anaemia</li> <li>- Every six months for children under 5 yrs.</li> <li>- Compare test reaction with accepted standard</li> </ul> </li> </ul>					<input type="checkbox"/>
3. Carry out haemoglobin Test Explain procedure to Pt. in simple language Acquire the skill of specimen collection	<ul style="list-style-type: none"> <li>- Tahlquist or haemoglobinometer</li> <li>Tell patient what is to happen</li> <li>Know that anaemia is haemoglobin below 10%</li> <li>- Steady the finger. Prick the finger gently</li> <li>- Have blood at 1st prick</li> <li>- Squeeze blood on blotting paper</li> <li>- Compare test reaction with accepted standard available at the clinic by visual observation</li> <li>- Record it correctly</li> <li>- Recommend treatment</li> <li>- Counsel patient e.g. Discuss diet</li> </ul>					<input type="checkbox"/>
<b>TASK NO. 6</b> <i>Management of malaria</i>						
1. Have knowledge of population she is serving	<p>Mention approx pop Figure</p> <ul style="list-style-type: none"> <li>- Geographical Area</li> </ul> <p>Describe the administrative structure</p>					<input type="checkbox"/>

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CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very	Well	Poor	Not at	Not
		Well	Well	Poor	All	Applicable
		3	2	1	0	9
2. Keep records on Births and Deaths (a) Information on the identity of the patient (b) Health History (c) Preventive and curative care provided (d) Patient attendance	Display any Record of B&D					
3. Understand the Reason for Keeping such records	Discuss health statistics confidently. Define it in method for obtaining, organizing and analysing Health data so as to be able to make comparisons with previous years and to predict future needs. Specify for locality					
4. Prepare written reports at the required intervals for submission to the appropriate authority	- Know the time for submission - Know the appropriate authority (e.g. Ministry)					
5. Establish Good Relationship with other members of staff for good communication						
<b>TASK NO. 7 Control of Disease</b>						
1. Have adequate knowledge of disease to be notified - Cholera, Yellow Fever, Small Pox, Measles, Etc.	Have the list at the clinic. Display or mention them.					
2. Know the reason for notification	Discuss health statistics Define it: Method for obtaining, organizing and analysing data so as to make comparisons with previous years and predict future needs					
3. Keep accurate and up to date records	Awareness - Display					
4. Prepare written reports to appropriate authority	Show copies					

CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very Well 3	Well 2	Poor 1	Not at All 0	Not Applicable 9
<p><u>TASK NO. 8</u> <i>Case for Handicapped Person</i></p> <ol style="list-style-type: none"> <li>1. Know common handicapping condition e.g. blindness, deafness, mental retardation, cerebral palsy, polio</li> <li>2. Have a copy of the directory of institutions catering for handicapped persons</li> <li>3. Register should contain full information</li> <li>4. Refer and follow up cases seen at the clinic to the institution catering for Handicapped person</li> </ol>	<p>Awareness. Identify any abnormality of new patient</p> <p>Availability of directory Know who has been referred What kind of care</p> <p>Display - names, address activities of handicapped persons, nature of handicap</p>					
<p><u>TASK NO. 9</u> <i>Organizational Chart</i></p> <ol style="list-style-type: none"> <li>1. Know what job description is i.e. structure</li> <li>2. Know those clinic activities which are performed by whom e.g. CIA Aides</li> <li>3. Know supervisor to whom workers is responsible</li> <li>4. Know the group to which activities is directed i.e. organizations rules and activities</li> <li>5. Write procedures for delivery of services. Availability of standing orders for diagnosis and treatment</li> <li>6. Check supplies and equipments regularly</li> </ol>	<p>Adequate job description - Clear statement of functions and responsibility of each worker Show or draw diagram</p> <p>Show clear statement of functions</p> <p>Describe easily/show diagram</p> <p>Describe specific information about duty time, dress, requirements of duties. How to report when ill or unable to work</p> <p>Show/display. Availability of guidelines</p> <p>Show/display record book</p>					

CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very Well 3	Well 2	Poor 1	Not All 0	Not applicable 9
7. Conduct regular staff meetings 8. Be available to all staff for discussion daily	Display minutes - frequency  No. of person who are able to see her. i.e. accessibility of CHO to staff. Interview staff					
TASK NO. 10	maintain drug group					
1. Describe the administrative procedure and structure for ordering necessary vaccine drugs  2. Know the types of immunization to administer to various groups at appropriate time  3. Order drugs at the appropriate time using standing order  4. Keep immunization drugs safe using appropriate storage facilities at the clinic  5. Instruct all vulnerable groups of the need to have necessary immunization - Vulnerable groups are: (a) All pregnant mothers (b) All newborns 0-1 yr. (c) All children age 1-5 yrs.  6. Discuss necessary immunization  7. Know conditions in various groups which puts them in grave danger if immunized  (a) Signs of Shock	Display/show records availability of necessary  Describe structure i.e. Ministry - Display/Diagrams or schedules of immunization periods  Availability of standing order  Availability of transport facilities or means of getting drugs to the clinics at required intervals  Availability of facilities at the clinic  Have clear written time table at the clinic (a) Obvious presence of vulnerable group at the clinic (b) Display all clinic appointment cards by vulnerable groups  Call child's name for identification  Probe mother so as to be sure child is safe to have immunization e.g. any obvious illness such as fever, running nose					

CRITERIA TO ASSESS COMPETENCE	INDICATORS FOR MEASUREMENTS	Very Well 3	Well 2	Poor 1	Not at All 0	Not applicable 9
(b) Severe respiratory distress (c) Fever over 40°C (d) Stiff neck (e) Haemoglobin Below 511G% (f) Abdominal pain with rigidity or marked tenderness (g) Profuse or prolonged diarrhea (h) No urine in the last 24 hours	Look at General Appearance for any Health Problems					<input type="checkbox"/>
8. Calculate the dosage (for adult and child) using age and weight according to the standing order	Availability of standing order Awareness of Child's age, ask mother Check child's previous record					<input type="checkbox"/>
9. Give injection using appropriate media in a correct safe manner	Clean upper part of buttocks with cotton wool and spirit. Teach mother to look after child after immunization.					<input type="checkbox"/>
10. Record immunization in DISS Chart	Discuss with mother future appointment					<input type="checkbox"/>

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## CURRICULUM FOR COMMUNITY HEALTH OFFICER/SUPERVISOR

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JOB DESCRIPTIONCOMMUNITY HEALTH OFFICER

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Position Summary

This is a promotion post for some categories of senior health staff after undergoing one academic year training at the prescribed institution by the Federal Ministry of Health in management techniques, logistics, technical, educational and supervisory activities. The selection should be from among the following categories:

- Public Health Nurse
- Community Health Supervisor
- Community Midwifery Sister
- Higher Rural Health Superintendent
- Nursing Sister/Superintendent

The Community Health Officer has the administrative and sometimes terminal responsibility (using standing orders) of the B.H.S.S. Unit under his/her care.

In Unit where there is a Medical Officer, the Medical Officer has only the medical responsibility while the Community Health Officer administrative responsibility.

Personal Qualification

1. Managerial ability to guide, supervise, and head others.
2. Ability to foster team spirit and sustain individual and team morale.
3. Initiative and ability to exercise independent and sound judgement.
4. A high sense of responsibility, accountability and dedication towards her professional activities, the team and the community.
5. Ability to interact with the adjust to the local working conditions, traditions and beliefs of the community.

Technical Duties

1. Organise Home-based referral programme
2. Interview, counsel and work with clients in the clinic and at home in keeping the family healthy.
3. Use standing orders.
4. Give primary care and counsel according to standing orders.
5. Carry out, refer for, and interpret appropriate laboratory procedures.
6. Take full responsibility of the child-spacing and labour room.
7. Perform all functions (technical and administrative) of the Community Health Supervisor, Community Health Assistant and Community Health

-Aides.

Administrative Functions:

1. In his/her role as the overall supervisor of the BHSS Unit, he coordinates and supervises the activities of the various members of the health team (Community Health Supervisor, Community Health Assistant and Community Health Aide).
2. Supervise the unit through the District/Village Health Committee meetings and informally through contact with opinion Leaders.
3. Co-ordinate activities of the BHSS Unit with the referral centres.
4. Manage resources such as drugs, equipment supplies, manpower and keep appropriate and accurate record of all supplies and drugs.
5. Ensure efficient logistic support of drugs, equipment and supplies.
6. Organize the routine maintenance of medical equipment, vehicles and make recommendation for changes.
7. Compile daily, monthly and yearly reports of the BHSS Unit activities.
8. Periodically evaluate staff and logistic support of the BHSS.
9. Motivate the health team and ensure work discipline.
10. Organize structured patient flow.
11. Obtain information and follow-up of referred cases.
12. Prepare and manage the accounting system of BHSS Unit.

Educational Functions:

1. Identify teaching/learning needs for both clients and staff.
2. Organize and participate in the in-service education of the staff.
3. Carry out health education in the clinic and community.
4. Teach other members of the health team to use standing orders.
5. Work with the BHSS training institution in the training of BHSS Health workers.

Community Functions:

1. Maintain good information and working contacts with the community leaders, representatives of other agencies and other health personnel.
2. Motivate and participate in community development activities in co-operation with the community leaders and representatives of other agencies.

Professional Qualifications:

1. Registration with the Federal Ministry of Health
2. Maintain code of ethic of the Health Professions.

COMMUNITY HEALTH SUPERVISORPosition Summary

The Community Health Supervisor could in many cases deputise for the Community Health Officer within certain proscribed limits of supervision. This may be too much to expect of a newly trained supervisor without experience. It would seem that this function might be more appropriate to the higher level of staff identified who would have acquired experience and possibly further training.

Position Summary

This is a promotion post for some categories of health workers after undergoing one academic year training at the proscribed institution by the Federal Ministry of Health in management techniques, logistics, technical, education and supervisory activities. The selection should be from among the following categories:

- Community Health Assistants with minimum of 24 months in the field.
- Nurses
- Community Midwives
- Rural Health Inspectors
- Assistant Rural Health Superintendents

Personal Qualification

1. Managerial ability to guide, supervise, and lead others.
2. Ability to foster team spirit and sustain individual and team morale.
3. Initiative and ability to exercise independent and sound judgement.
4. A high sense of responsibility, accountability and dedication towards her professional activities, the team and the community.
5. Ability to interact with and adjust to the local working conditions, traditions and beliefs of the community.

Technical Duties

1. Organise home-based referral programme.
2. Interview, counsel and work with clients in the clinic and at home in keeping the family healthy.
3. Issue standing orders.
4. Give primary care and counsel according to standing orders.
5. Carry out, refer for, and interpret appropriate laboratory procedures.
6. Take full responsibility of the child-spacing and labour room.
7. Perform all functions (technical and administrative) of the Community Health Assistant and Community Health Aides.

1. In his/her role as the Senior member supervisor of the Health team in the BHSS Unit, assist Community Health Officer in the co-ordination and supervision of the activities of the various members of the health team (Community Health Assistant, Community Health Aides).
2. Assist in the supervision of the unit through the District/Village Health Committee meetings and informally through contacts with Opinion Leaders.
3. Assist in co-ordinating activities of the BHSS Unit with the referral centres.
4. Manage resources such as drugs, equipment, supplies, manpower and keep appropriate and accurate records of all supplies and drugs.
5. Ensure efficient logistic support of drugs, equipment and supplies.
6. Organize the routine maintenance of medical equipment, and vehicles and make recommendation for changes.
7. Assist in compiling daily, monthly and yearly report of the BHSS Unit activities.
8. Periodically, evaluate staff and logistic support of the BHSS.
9. Motivate the health team and ensure work discipline.
10. Organize structured patient flow.
11. Obtain information and follow-up of referred cases.
12. Assist in preparing and managing the accounting system of BHSS Unit.

Educational Functions

1. Identify teaching/learning needs for both clients and staff.
2. Organize and participate in the in-service education of the staff.
3. Carry out health education in clinics and community.
4. Teach other members of the health team to use standing orders.
5. Work with the BHSS training institution in the training of BHSS Health workers.

Professional Qualifications

1. Registration with the Federal Ministry of Health.
2. Maintain code of ethics of the Health Professions.

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COMMUNITY HEALTH OFFICE/SUPERVISOR  
TRAINING PROGRAMME  
FOR THE BASIC HEALTH SERVICES SCHEME (BRSS)

INTRODUCTION:

THE CURRICULUM CONSISTS OF 3 UNITS

UNIT I: General Health Care:

- 1.1 Health Education
- 1.2 Environmental Health
- 1.3 Control of Communicable Diseases
- 1.4 Nutrition
- 1.5 Accidents and Emergency Medicine
- 1.6 Dental Care
- 1.7 Community Mental Health
- 1.8 Use of Standing Orders
- 1.9 Diagnostic Services
- 1.10 Health Statistics

UNIT II: Personal Health Care:

- 2.1 Maternal and Child Health
  - 2.1.1 Pre-School Child
  - 2.1.2 The School Child
  - 2.1.3 Maternal Health
- 2.2 Occupational Health
- 2.3 Care of the Aged
- 2.4 Care of the Handicapped

UNIT III: Organisation and Management of Basic Health Services:

- 3.1 Supply of Drugs
- 3.2 Management of Basic Health Services
  - 3.2.1 Management of Health Centres/Clinics
  - 3.2.2 Operation of Health Centres/Clinics  
Accounting System
- 3.3 Referral Services
- 3.4 Community Involvement in Health Care
- 3.5 Mobile Services

UNIT I of the training programme for Community Health Officer/Community Health Supervisors aims to develop General Health Care skills. This Unit consists of ten sub-units namely:

- 1.1 Health Education
- 1.2 Environmental Health
- 1.3 Control of Communicable Diseases
- 1.4 Nutrition
- 1.5 Accidents and Emergency Medicine
- 1.6 Dental Care
- 1.7 Community Mental Health
- 1.8 Use of Standing Orders
- 1.9 Diagnostic Services
- 1.10 Health Statistics

### HEALTH EDUCATION

#### General Objectives

- 1.1 Promote individual and community self-reliance in health matters.
- 1.2 Environmental Health  
Identify environmental health hazards in the community and take appropriate action.
- 1.3 Control of Communicable Diseases  
Manage and control communicable diseases.
- 1.4 Nutrition  
Assess the nutritional status of the individual community and establish preventive and curative services.
- 1.5 Accident and Emergency Medicine  
Recognize emergency condition initiate treatment and refer as appropriate.
- 1.6 Dental Care  
Screen for dental problems, perform prevent and first aid services.
- 1.7 Community Mental Health  
Recognise psychiatric emergencies, take appropriate action and supervise the management of patient under specialist care.
- 1.8 Use of Standing Orders  
Use standing orders to manage the common and emergency conditions, and refer the more complicated and those needing further attention

to a doctor or Senior Community Health Officer.

1.9 Diagnostic Services

Supervise a clinic laboratory and ensure the proper running of laboratory services.

1.10 Health Statistics

Prepare a plan for keeping records, registers and reports for clinic administration and evaluation.

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UNIT II is concerned with teaching Preventive, Promotive and Curative aspects of Personal Health Care. The sub-units are:

2.1 FAMILY HEALTH including:

2.1.1 PRE-SCHOOL CHILD

2.1.2 THE SCHOOL CHILD

2.1.3 MATERNAL HEALTH

2.2 OCCUPATIONAL HEALTH

2.3 CARE OF THE AGED

2.4 CARE OF THE HANDICAPPED

General Objectives:

2.1.1 Pro-School Child

Assess the health of a child with respect to growth, development, nutrition and immunization and take appropriate action.

2.1.2 School Child

Assess Child Health needs and resources in the community in order to assist in planning, implementing, maintaining and evaluating child health services.

2.1.3 Maternal Health Services

Assess Maternal Health needs and resources in the community in order to assist in planning, implementing, maintaining and evaluating maternal health services.

2.2 Occupational Health

Identify the main occupational health hazards in a community and take appropriate preventive and curative action.

2.3 Care of the Aged

List the special problems of the aged, describe the facilities available to help them and assist in the provision of health care when needed.

2.4 Care of the Handicapped

Identify and manage handicapping conditions.

UNIT III: Organisation and Management of Basic Health Services

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This Unit consists of five closely related sub-units:

- 3.1 Supply of Drugs
- 3.2 Management of Health Services and Clinics
- 3.3 Referral Services
- 3.4 Community Involvement in Health Care
- 3.5 Mobile Services

To provide a meaningful community oriented health services, the organisation and management of service facilities must be interrelated with community health needs and community health activities and resources.

General Objectives

- 3.1 Supply of Drugs  
Maintain constant supply, storage and flow of drugs.
- 3.2 Management of Health Services and Clinics
  - 3.2.1 Organize and manage basic health service facilities
  - 3.2.2 Operate the accounting system of the basic health services facilities and teach other team members.
- 3.3 Referral Services  
Establish an operative referral system.
- 3.4 Community Involvement in Health Care  
Organise, mobilize and encourage community participation in health maintenance.
- 3.5 Mobile Services  
Assess the need for mobile clinics in any given area and organize, supervise and evaluate those that are required.

FEDERAL MINISTRY OF HEALTH,  
PRIMARY HEALTH CARE  
CO-ORDINATING UNIT

Federal Ministry of Health,  
Primary Health Care Unit,  
8, Harvey Road,  
Yaba.

8th December, 1983.

The Chief Health Officer,  
All States.

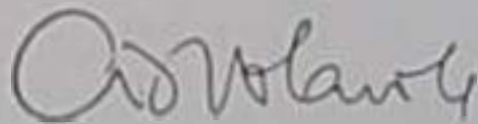
HEALTH PROBLEMS IN NIGERIA

I am hereby directed to request that you arrange to have the enclosed questionnaire despatched to all the Community Health Officers in your state and help to ensure that the questionnaires are completed and returned to our Unit as early as possible.

Also to introduce Mrs B. N. Oduyoye to you who will visit your state in the month of February and March 1983.

The visit will serve as a follow-up of the questionnaire.

Thanks.



DR. A. O. KOLAWOLE,  
CHIEF CO-ORDINATOR (PHC).  
FEDERAL MINISTRY OF HEALTH,  
PRIMARY HEALTH CARE  
CO-ORDINATING UNIT

## FEDERAL MINISTRY OF HEALTH

PRIMARY HEALTH CARE UNIT DIVISION

FED. SECRETARIAT, IKOYI, LAGOS.

P.M.D. No. \_\_\_\_\_

Telegrama PERMHEALTH

Telephone \_\_\_\_\_



Ref. No. \_\_\_\_\_

Date 19th January, 1984.Chief Medical Director,  
Teaching Hospital,Lagos  
Ibadan  
Ilorin  
Abu  
Enugu  
Ife  
Jos  
Calabar  
BeninAttention: Coordinator of the  
Community Health Officer Course

This is to introduce Mrs. S.M. Oduyoye who is doing her Doctorate programme at the University of Ibadan.

The focus of her study is to evaluate the performance of Community Health Officers on the field and relate it to their training programme.

Kindly assist her in all possible ways necessary to collect her data in your Institution/Department.

There are some questionnaires designed for all the people and also members of staff (faculty members) engaged in the training of Community Health Officers, these I would appreciate if they can be despatched to them for completion and returned as early as possible.

Thank you.

Dr. A. O. Molowa,  
Chief Coordinator, (PHC).

Federal Ministry of Health,  
Primary Health Care Unit,  
8, Harvey Road,  
Yaba,  
Lagos.

8th December, 1983.

Dear Sir/Madam,

The training of Community Health Officer of which you are one started in 1979.

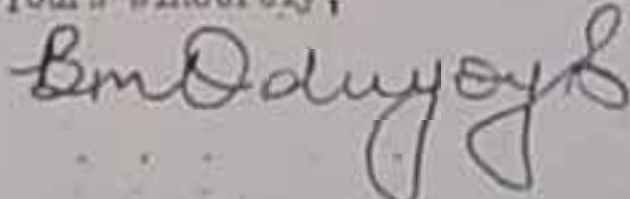
Since the development of this programme, there has not been any study to address your abilities and highlight your role in the Community.

The objective of this study therefore is to perform that function and also find out what factors hinder or aid your performance in the Community so as to make necessary recommendations.

I would be pleased if the attached questionnaire could be completed and returned as early as possible. A visit to your State will follow the completed questionnaire.

Thank you for your co-operation.

Yours sincerely,



Mrs. B. M. Oduyoye.